PROCEEDINGS

of the

American Society

of

Civil Engineers

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VOL. 54 DECEMBER, 1928 No. 10

CONTENTS

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SOCIETY AFFAIRS

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AMERICAN SOCIETY OF CIVIL ENGINEERS

PROCEEDINGS

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SOCIETY AFFAIRS

THE SAN DIEGO MEETING

The Fall Meeting of the Society for 1928 which was held at San Diego, Calif., October 3, 4, and 5, was a great success from the standpoints of attendance, technical activities, and social and recreational aspects. It is felt that those members and their families and guests privileged to be present will have an especially pleasant page or chapter to add to their own "Book of Experience".

The members of the San Diego and Los Angeles Local Sections who were sponsors for the splendid success of the sessions, proved themselves admirable hosts to the visiting members, furnishing quite adequate proof to the unenlightened, of the enthusiasm, efficiency, and *joie de vivre* of the Californian and his land of flowers and sunshine.

The gross registration was approximately 500, of whom about 285 were members. Registration from California amounted to about 350 members and guests. Geographically the representation included eighteen States, as well as England, Hawaii, Lower California, Mexico, and one guest from India.

The general topic considered at the Wednesday sessions was Aviation in its engineering aspects and especially as it affects that inherently engineering problem, Transportation. These sessions were attended by practically the entire membership present. The recognition given to the speakers at the presentation of the papers and the extent and breadth of the discussions, gave proof of the civil engineer's part as well as his interest and influence in the marvellous present era of progress, be it a mechanical, scientific, or an engineering age.

The civil engineer showed himself also keenly interested in the question of National Defense. An ovation was given to Admiral Reeves upon the presentation of his tremendously interesting lecture entitled "The Eyes of the Fleet", which preceded Commander Whiting's paper on "Airplane Carriers", a most illuminating description of the latest advances in naval architecture.

The Technical Division meetings on Thursday pointed out the true professional and technical character of the Society's membership when a careful check up of attendance at both the morning and afternoon sessions disclosed that 95% of the members at the meeting were in attendance.

At its morning session the Irrigation Division treated Reclamation as its chief topic, a question of supreme interest to the civil engineer in the vast reaches of the arid West. That same Division met jointly at the afternoon session with the Construction Division, which brought forth most excellent papers on High Dams. To show that technically the San Diego meeting was one dealing with the conservation, subjugation, and utilization of that "element" of Nature, namely,—Water, the attendance figures show that 70% of the members attended this Division meeting.

By no means, however, must one consider that the meetings of the Highway, City Planning, and Sanitary Engineering Divisions were without interest to the members. All the meeting rooms were taxed to capacity and there was much general discussion (a true criterion of an interesting and "good" meeting).

The entertainment and recreational events incident to the meeting again showed in a very convincing manner the qualities of the Southern California members as most cordial hosts. The Wednesday dinner dance was excellent—this

was true of the food, the carnival favors, the decorations, the music, and the Southern Californian atmosphere, as represented by a native Mexican string band which played, sang, and danced most acceptably.

Admiral Reeves favored the membership and guests with his famous lecture "The Battle of Jutland" at the Thursday evening dinner. It was most illuminating from the standpoints of general interest, naval strategy and operation, and in its excellence and clarity of delivery.

In a similar manner the entertainments for the ladies were many and varied. All were admirably handled.

As the meeting had for its general topic that of Aviation, the feature of the Friday excursion was a trip to the U. S. Naval Aviation Base and the Navy Yard. Due to the kindness of the Naval Authorities, through whose co-operation and assistance a considerable part of the success of the meeting must be credited, forty Society members were permitted to fly in Navy planes, those same "Eyes of the Fleet" of which Admiral Reeves had spoken. The remainder of the party spent a most enjoyable day inspecting the flying fields, hangars, and various types of land and sea planes, as well as making an intimate inspection of the various battleships, cruisers, destroyers, submarines, and the U. S. S. *Langley*, an airplane carrier. On all sides, this Friday excursion trip was voted eminently successful.

From the many favorable reports from various members, it may not be deemed a redundancy to reiterate the fact that from every standpoint the San Diego meeting marked a most delightful and profitable occasion to those in attendance.

HOOVER—JOHN FRITZ MEDALIST

Herbert Clark Hoover, elected a Member of the Society in 1910, Honorary Member in 1924, and now President-Elect of the United States, was awarded the John Fritz Gold Medal on October 19, 1928. This unanimous award was announced after confirmation at that time, tentative selection having been made a year previously.

Thus, the members of the Four Founder Societies, through their Committees on the Board of Award, have given to an eminent engineer the highest professional distinction within their gift. The citation giving the basis on which the medal is presented, reads: "To Herbert Hoover, Engineer, Scholar, Organizer of Relief to War-Stricken Peoples, Public Servant."

In addition to being an Honorary Member of the Society, Mr. Hoover enjoys similar memberships in the American Institute of Mining and Metallurgical Engineers, and the American Society of Mechanical Engineers.

Doubtless the award proper, which will be made in February, 1929, at the Annual Meeting of the American Institute of Mining and Metallurgical Engineers, will be the occasion of an outpouring of professional acclaim to this great engineer and great public officer. The representatives of the Society on the Board of Award comprise the following Past-Presidents: C. E. Grunsky, Robert Ridgway, George S. Davison, and John F. Stevens.

GRATITUDE FOR LOUVAIN MEMORIAL

In behalf of American engineers who gave the clock and carillon of the Louvain Library dedicated July 4, 1928, a letter of thanks has been addressed to Edward Dean Adams. Affiliate, Am. Soc. C. E. Mr. Adams was Chairman of the Committee which collected the funds for this beautiful memorial.

The present letter, dated September 25, 1928, comes from Monsieur P. Ladeuze, Rector of Louvain University, and states in part:

"The splendid memorial to the American Engineers who fell in the war was, without doubt, a very noble conception and one which was most agreeable to us all. It represents so fully the sentiments of the donors and it expresses so adequately the ties of overlasting friendship which exist beween your societies and the University of Louvain, that no one could have imagined a better memorial than this one.

"In the spire of the Library tower, the Liberty Bell and the carillon will remain for generations to come the magnificent proof of your generous help, of your lofty ideals of science and humanity, of your noble conception of international solidarity. The University of Louvain owes to you all a debt of gratitude which cannot be repaid.

"I am happy to thank you also for your presence and the presence of the delegates of the Founder Societies at the celebrations of the 4th of July; presence which was most precious to us, because

it allowed us to exchange with you sentiments and words which were to bring us together in an atmosphere of warm and cordial friendship."

WORLD ENGINEERING CONGRESS

In less than a year the far-reaching World Engineering Congress will have convened in Tokyo. Already plans are well advanced, committees are doing valiant work for the various phases of activity, and renowned engineers are planning to attend and deliver papers. A bird's-eye view of the events may serve to focus the attention of those who already should be planning to attend.

Under the auspices of the Kogakkai (Engineering Society of Japan) the Congress will have official and Government support. Details of the meetings are in the hands of eminent Japanese engineers and statesmen, assisted by National Committees working in the various countries to be represented, and covering finances, papers, sessions, excursions, reception, and publication.

Preceding the Congress, four days (October 25-28) will be spent on short excursions near Tokyo. The meetings themselves will occupy most of ten days, October 29 to November 7, inclusive. Then, for about two weeks, the visitors will be privileged to enjoy extensive sightseeing and engineering trips covering a wide area of the Japanese Empire, by railway, steamer, and motor car. These will be facilitated by the generous provision for free passes on any Japanese Government Railway during the Congress.

To give an idea of the scope of the sessions as far as the interest of the Civil Engineer is concerned, it is only necessary to enumerate the subjects under which papers from members are being requested. Such a list includes topics like Public Health, Railroads, Dams, American Skyscrapers, Structural Engineering, River Engineering, Suspension Bridges, Earthquake-proof Construction, Foundations, Reclamation, Ventilation of Tunnels, Transportation, Power, and Cement—surely a wide range.

Many members are hoping to avail themselves of these delightful plans. For those who care to learn further details, requests for information will be welcomed. Address the Headquarters of the American Committee, World Engineering Congress, 33 West 39th Street, New York, N. Y.

ENGINEERING FOUNDATION'S SERVICES IN RESEARCH

Excerpts from Statement by the Chairman, Lewis B. Stillwell, M. Am. Soc. C. E.

United Engineering Society is making an organized effort to increase the endowments of Engineering Foundation and Engineering Societies Library. In view of this fact, some brief observations on the work of Engineering Foundation may be deemed appropriate.

The Endowment Committee, consisting as it does of practical men, began by asking Engineering Foundation a very practical question, namely: If you had the money, what would you do with it? The five "impressive" researches proposed by Engineering Foundation were:

1.—Alloys of Iron Research.

2.—Properties and Life of Wire Ropes in Service.

3.—Use of Small Models for Prediction of Stresses and Strains in Engineering Structures.

4.—Dielectric Properties of Insulating Liquids.

5.—Dielectric and Physical Properties of Impregnated Paper Insulation.

In the field of engineering research are at work a considerable number of agencies and many thousands of workers. In recent years we have witnessed the gradual evolution of great engineering research establishments developed by manufacturing corporations devoting organized and widely comprehensive efforts to research in their several fields of activity.

Multitude of Agencies

To-day, industrial research plays a very large, if not the largest, part in engineering research. It works with definite objectives, large financial resources, and strong incentive to strenuous and systematic effort.

Some Governmental bureaus, notably the Bureau of Standards, the Bureau of Public Roads, and the Bureau of Reclamation, are carrying on extensive and important engineering research work and are co-operating admirably with other agencies, such as Engineering Foundation, National Research Council, the universities, and the industries.

Another contributor to progress in engineering research, and in the aggregate a very important one, has been the engineer who, not regarding himself as an inventor and rarely seeking to patent his

ideas, nevertheless has sought to improve practice by adding new methods to precedent.

Notwithstanding the many and powerful agencies which in recent years especially have so greatly accelerated material progress, there are to-day problems of the greatest importance in plain sight and awaiting solution. Engineering Foundation and the Research Committees of the Engineering Societies are in a peculiarly favorable position to attack them.

Societies at Work

There are approximately 60 000 professional engineers in the ranks of the Founder Societies to-day. Many of them are among the leaders in the work of Governmental bureaus and in the scientific and engineering departments of our universities.

Recognizing the opportunity, the leading engineering societies of the country have established research committees and already have an impressive list of accomplishments to their credit. The spirit of co-operation is generally admirable and the willingness of many of their leaders to give their time and earnest attention to the work of the research committees and of special committees appointed to study specific problems has been demonstrated repeatedly. What these committees have accomplished, however, while considerable in itself, is little compared to what might have been done had it been possible for them to bring to bear upon their research problems the continuous or even closely consecutive attention of selected minds best qualified to find the answer. The profession is deeply indebted to the able men who have served and are serving on these committees and who are giving of their time, their ability, and their experience. It cannot be expected, however, that a busy man primarily and quite properly interested in earning a living and achieving personal success should give to the work of a committee anything like the hard-driving consecutive attention which he gives and must give to work which he is paid to do.

In the majority of cases the effective prosecution of engineering research is best assured if the committee in charge of an investigation can select competent men, secure for them the necessary facilities and assistance, and place them in a position to give their entire time, or a substantial and definite part of it, to the work.

University Research

Among the scientific faculties of our universities there is many a man qualified and ready to carry on such work for an honorarium extremely modest as compared to the results reasonably to be expected. The attitude of the university authorities is highly sympathetic. Many of them stand ready to provide excellent facilities in laboratory equipment. Graduates and upper-class students are available as volunteer assistants. All these resources of special knowledge, skill, enthusiasm, and facilities can be brought to bear upon selected engineering problems if Engineering Foundation can secure a relatively modest financial endowment such as the Founder Societies are endeavoring to provide through the efforts of United Engineering Society and the Committee on Endowment which it has organized.

Engineers to-day generally recognize the fact that although individually we must specialize to a greater or less extent, there is no department of engineering activity which does not affect us all. They recognize also that no hard and fast boundaries delimiting the fields of activity in which each of the great societies is primarily interested can be drawn. What each society may regard as its special field overlaps in every case with that of one or more of the other societies. It was a logical necessity, therefore, that the Founder Societies sooner or later should organize a committee or board representing them collectively and charged with the responsibility of co-ordinating and promoting the work of the societies in engineering research.

Co-Operation

The Founder Societies, through their respective research committees and Engineering Foundation, are working together in a spirit of the most friendly and helpful co-operation. This extends beyond the Societies and includes other National scientific and engineering organizations, notably National Research Council and the American Chemical Society.

It is not the policy of the Foundation to attempt to dictate to any engineering society what work its research committee shall undertake or how it shall be prosecuted. On the contrary, it desires to encourage to the utmost the self-reliance and emulous ambition of the research committees. These committees backed by their governing boards are in position to select and utilize the best ability and

experience of their respective societies. Their resources of personnel are great, and they are in position to make these resources effective by securing financial aid not only from Engineering Foundation, but from men who may prefer to assist a favorite society rather than contribute to a general research fund.

Within the limits of its available income, Engineering Foundation is supporting and supplying funds for approved projects proposed by any of the Founder Societies. If the project is of unusual magnitude, the Foundation stands ready to co-operate with the Society in the endeavor to select the most competent committee available as well as in the effort to secure necessary funds. When a research is initiated by the Foundation, it is customary to invite the active co-operation of one or more of the Founder Societies. These Societies and the Foundation unite to sponsor the investigation, as was done in the case of the Stevenson Creek Experimental Dam and the collateral work with models carried on by the Bureau of Reclamation at Boulder, Colo., and by Professor Beggs and his assistants, at Princeton, N. J.

Administration Problems

Any member of a Founder Society, or in fact any one who may encounter an engineering problem calling for research, may bring it to the attention of the agencies established by the Founder Societies. He may present his problem to the Research Committee of one of the Societies or he may bring it directly to the attention of Engineering Foundation.

In the former case, it will be considered first by the Research Committee of the Society which he may select. If that Committee approves the proposed investigation, it may undertake the necessary research on its own responsibility or it may invite the co-operation and assistance of Engineering Foundation. If it asks an appropriation from Engineering Foundation, the Board will consider the project and form its own judgment of the objective sought and of the means available for attaining that objective. This double scrutiny is a safeguard of value especially in view of the necessity of selecting for the expenditure of time and money a practicable number of the most promising projects among the many which are brought to the attention of the Board. If approved, appropriations will be made within the limit of funds available, bearing in mind the apparent merit of the specific project as related to others under consideration at the time.

As an alternative, the engineer who desires to propose a research may bring it directly to Engineering Foundation. In this case, it is first considered by the Board which is in position to ask, and when deemed necessary does ask, advice from the most competent sources available, and if its decision is favorable, it is the practice of the Board to invite the Society most interested to sponsor the research individually or jointly with Engineering Foundation.

Meetings of the Board of Direction

This is an abstract of the notes of the Secretary and subject to approval by the Board of Direction at its next meeting.

The Board met at the El Cortez Hotel, San Diego, Calif., on October 1 and 2, 1928; President Lincoln Bush in the chair; George T. Seabury, Secretary; and present, also, Messrs. Bell, Brillhart, Davison, Dennis, Dougherty, Eddy, Fowler, Fuller, Hammond, Hatton, Hill, Hoyt, Johnston, Knowles, Paul, Pirnie, Sawyer, Stevens, and Taber.

Approval of Minutes

The minutes of the meetings of the Board of Direction held on July 16 and 17, 1928, were approved.

Approval of Minutes of Executive Committee

The minutes of the meeting of the Executive Committee held on August 28, 1928, were approved, and the actions outlined therein were adopted as the action of the Board.

J. Waldo Smith Elected Honorary Member

By unanimous vote of the Board, J. Waldo Smith, M. Am. Soc. C. E., was elected an Honorary Member of the Society. The Secretary subsequently reported Mr. Smith's acceptance.

Anson Marston Nominated for President of Society

The Nominating Committee reported that Anson Marston, M. Am. Soc. C. E., had been unanimously nominated for President of the Society for 1929. Dean Marston's acceptance of the nomination was reported.

Amendments to By-Laws

Notice having been given at the July meeting of the Board of four amendments to the By-Laws, final action was taken resulting in adoption, as follows:

Article VI, Meetings, Section 1, was amended to read:

"1.—Regular business meetings of the Society shall be held in March and October. In addition to the Annual Meeting and the Annual Convention, meetings for the reading and discussion of papers shall be held as ordered by the Board of Direction."

Article VII, Technical Divisions, Section 3, was amended to read:

"3.—The Division shall elect an Executive Committee of 5 members of the Division who shall be Corporate Members of the American Society of Civil Engineers, to have charge of its affairs under the guidance of the Board."

Article III, Management, Section 4, Paragraph 5, which refers to the duties of the Secretary, was amended to read:

"He shall personally certify the accuracy of all bills or vouchers on which money is to be paid, and shall countersign the checks drawn by the Treasurer against the funds of the Society, when such drafts are known to him to be proper and duly authorized by the Executive Committee and shall also counter-

sign all stock certificates; in case of his absence or disability, the Assistant Secretary shall act in his stead."

Section 5 of Article III, Management, which refers to the duties of the Treasurer, was amended to read, as follows:

"5.—The Treasurer shall receive all moneys and deposit the same in the name of the Society. He shall invest all funds not needed for current disbursements, as shall be ordered by the Board of Direction. He shall pay all bills, when certified, and audited as provided by these By-Laws and by rules to be prescribed by the Board of Direction. He shall sign all stock certificates when these are redeemed or sold. He shall make an annual report and such other reports as may be prescribed by the Board of Direction."

Standards for Engineering and Scientific Symbols Approved

The Society having been one of the sponsor organizations of the project of American Engineering Standards Committee on Symbols for Hydraulics, on Better Symbols for Electrical Quantities, and on Aeronautical Symbols, the reports of the Standards Committee on these matters were approved.

Revised Constitution of American Engineering Standards Committee Approved

Approval was given the proposal to change the Constitution of American Engineering Standards Committee.

Report of Committee on Local Sections

The following recommendation of the Committee on Local Sections was approved:

"That an allotment of $2 per member be paid for 1929 to all Local Sections except Central Ohio, Colorado, Georgia, Los Angeles, North Carolina, Sacramento, San Francisco, Texas, and Western Washington, which shall receive an allotment of $3 per member for 1929, with such modifications as may be made by the Executive Committee following recommendation by the Committee on Local Sections."

Committee on Professional Conduct

The Committee on Professional Conduct reported on four cases that it had considered, and the recommendations of the Committee were adopted.

Committee on Technical Expansion

The Committee on Technical Expansion presented a progress report covering Engineering Research and Special Committees, which was approved. The Committee also presented its views with respect to Non-Technical Society Activities and Meetings and was authorized to study these matters further for report at the January Meeting.*

Committee on Prizes

The report from the Committee on Prizes was adopted.†

* *Proceedings*, Am. Soc. C. E., November, 1928, Society Affairs, p. 438.

† *Loc. cit.*, p. 439.

Biographical Sketches of Official Nominees

The following are brief biographical sketches of the Official Nominees for the offices to be filled at the Annual Election of the Society on January 16, 1929:

Anson Marston

(Official Nominee for President)

Born May 31, 1864, Seward Township, Winnebago County, Illinois (Country Schools, Winnebago County, Ill.; West Rockford High School, Rockford, Ill., 1883; (Teacher, 1883-1884); Berea Coll., Berea, Ky., 1884-1885; Cornell Univ., Ithaca, N. Y., C. E., 1889; Univ. of Nebraska, D. Engr., 1925 (Honorary); Michigan State Coll., D. Engr., 1927 (Honorary))—Summers 1886, 1887, and 1888 Rodman, Illinois Central Ry.: 1889-1892 Instrumentman, Res. Engr. and Chf. of Party, railroad and bridge location and construction, mostly on Missouri Pacific Ry. in Arkansas and Louisiana: 1892-1904 Prof., Civ. Eng., and 1904 to date Eng. Dean and Director, Iowa State Coll., Ames, Iowa: 1892 to date general consulting civil engineering practice, bridges, sewerage, water supply, highways, drainage: 1898 designed and constructed first sewage disposal plant in Iowa: 1904 Fuertes Gold Medal, Cornell Univ.: 1904 Chanute Medal, West. Soc. of Engrs. for paper on "Sewage Disposal in Iowa": 1904-1927 Member, Iowa Highway Comm.: July 1917 to Dec. 1918 Maj. and then Lt.-Col. of Engrs., U. S. Army; 1924 Col., Engr. Reserve Corps: 1924-1925 Member, Eng. Board of Review, San. Dist. of Chicago: 1927 Member, Eng. Board of Review, Florida Everglades: Pres. (1900) Iowa Eng. Soc.; Pres. (1914) Land Grant Coll. Eng. Assoc.; Pres. (1915) Soc. for the Promotion of Eng. Education; Member, Executive Committee (1924-1925), Am. Soc. for Testing Materials; Member (two terms), National Research Council; Past-Chairman, Advisory Board on Highway Research; Member, Am. Soc. C. E. (Vice-Pres., 1923-1925; Director, 1920-1922): author of "Sewers and Drains" (American Correspondence School), and numerous technical papers.

Arthur James Dyer

(Official Nominee for Vice-President, Zone II)

Born May 27, 1868, Medfield, Mass. (High School, Chattanooga, Tenn.; Vanderbilt Univ., B. E., 1891.)—1891-1894 Draftsman, Phœnix Bridge Co., Phœnixville, Pa., U. S. Light House Board, Washington, D. C., and Milliken Bros., New York, N. Y.: 1894-1901 Designing and Field Engr., Youngstown Bridge Co. and American Bridge Co.: 1901-1902 Structural Engr., and 1902 to date Pres. and Chf. Engr., Nashville Bridge Co., engaged in designing and constructing phosphate and cement plants, mill buildings, and bridges.

Alonzo John Hammond

(Official Nominee for Vice-President, Zone III)

Born April 23, 1869, Thorntown, Ind. (Common and High Schools, Frankfort, Ind.; Rose Polytechnic Inst., B. S., 1889; M. S., 1894; C. E., 1898;

Mass. Inst. of Technology 1891)—Until 1898 City Engr., Frankfort: 1898-1901 Asst. Engr., Vandalia Ry.: 1901-1909 City Engr., South Bend, Ind.; Bridge Engr., St. Joseph County, Indiana; Chf. Engr., Ind. Ry. and South Mich. Ry. (Elec.); Cons. Engr. on hydro-electric projects, St. Joseph River and Paw Paw River; experimental data on effects of dams on back-water curve, St. Joseph River; tests on deep-well pumps: 1910 Cons. Engr., Comm. on City Expenditures, Chicago, Ill.: 1911 Chf. Engr., Bureau of Public Efficiency, Chicago; study of operations, municipal taxing bodies, in Cook County, Illinois: 1912-1913 Engr. in Chg. of Bridge and Harbor Div., Dept. of Public Works, Chicago; with other bridges were included double-deck bascule bridges at Lake St. and Michigan Ave.; also, built three fixed bridges by day labor: 1914 private practice and resting from illness: 1915-1922 Cons. Engr. and Asst. Chf. Engr., Chicago Union Station Co., in charge, engineering design and construction of railway passenger terminal ($75 000 000 project): 1922-1925 Chf. Engr., Jas. O. Heyworth, Inc.: 1926-1927 Chf. Engr., Mellon-Stuart Co., Constr. Engrs.: June 1928 to date Cons. Engr., Chicago: author of papers, "Experiments on Deep-Well Pumps"; "Design and Construction Methods of 14-Foot Water Tunnel Under Lake Michigan at 73d Street"; "Pavements of Chicago"; and "Electrolysis of Chicago Water Mains": Member, Am. Soc. C. E. (Director, 1926-1928): Past-Pres., Illinois Section, Am. Soc. C. E.; Past-Pres., Indiana Eng. Soc.; Member, West. Soc. of Engrs., Am. Ry. Eng. Assoc., Engrs. Club of Chicago, and Board of Mgrs., Rose Polytechnic Inst.

George Harvey Norton

(Official Nominee for Director, District No. 3)

Born October 24, 1863, East Pembroke, N. Y. (Cornell Univ., C. E., 1887)—1887 Instrumentman, Duluth, South Shore & Atlantic R. R.: 1888 Instrumentman, Chic. & West. Michigan R. R. (Pere Marquette R. R.): 1888-1889, Draftsman, Buffalo, N. Y., Grade Crossing Comm.: 1889-1897 Asst. City Engr., Buffalo, general city work: 1898 Spanish-Am. War Service: 1898-1908 Asst. City Engr., Buffalo, on river, harbor, bridge, and viaduct construction and maintenance, including flood prevention: 1909-1923 City Engr., Buffalo, and Acting Commr. of Public Works (1915): 1923 to date Chf. Engr., Buffalo Grade Crossing and Terminal Station Comm.; development of general plan, contract, and supervision of new main passenger terminal, New York Central R. R., Buffalo, now nearing completion; developed plan for down-town terminal, N. Y. C. R. R.; completed five grade eliminations and proceedings pending on seven: 1920-1924 Chairman, Buffalo City Planning Committee; Member, City Planning Inst.; Member and Director, Buffalo City Planning Assoc. and Niagara Frontier Planning Assoc.; Director and Past Vice-Pres., Buffalo Chamber of Commerce; Member and Past-Pres., Am. Soc. for Municipal Impvts.; Member and Past-Pres., Buffalo Eng. Soc.; Member, Am. Soc. C. E.; Past-Pres., Buffalo Section, Am. Soc. C. E.; Member, Cornell Soc. of Engrs. and Buffalo Athletic Club.

Frank Lee Nicholson

(Official Nominee for Director, District No. 5)

Born August 12, 1868, Portsmouth, Va. (Common and High School; Suffolk Military Academy (2 years, Civ. and Railroad Eng.); Correspondence Courses in Bridge Engineering, Architecture, and Electrical Engineering)—Aug. 1887 to Mar. 1889 Rodman, Chainman, Levelman, Office Asst. to Chf. Engr. on Location Surveys, Atlantic & Danville R. R. (now Danville Div. of Southern Ry.): April 1889 to Jan. 1890 Levelman, then Res. Engr. on construction of Wilmington, N. C., Terminal, and First Residency, Wilmington, Newbern & Norfolk R. R. (now Newbern Branch of Atlantic Coast Line R. R.): Jan. to June 1890 private practice, engaged largely in special railroad surveys: June 1890 to Mar. 1892 Asst. Engr., M. of W.; Mar. 1892 to Jan. 1898 Acting Engr., M. of W.; Jan. 1898 to May 1909 Engr., M. of W.; and May 1909 to date, Chf. Engr., Norfolk Southern R. R. and, Feb. 1914 to date, in full charge of valuation of Norfolk South. R. R. and allied properties: Feb. 1912 Chf. Engr., Raleigh, Charlotte & Southern R. R., until purchased by Norfolk South. R. R. and consolidated therewith: July to Dec. 1918 Cons. Engr., and Dec. 1918 to May 1919 Chf. Engr., The Virginian Ry.: during Federal Administration of Railroads, served in Washington as a representative of the Southern Region on a Committee for the Drafting of Rules and Working Conditions for Maintenance-of-Way Employees and Shop Labor: now, also, Chf. Engr. and Valuation Engr., Carolina R. R. and the Kinston-Carolina R. R.: Charter Member, Am. Ry. Eng. Assoc., and Chairman, Sub-Committee No. 1, Committee XX, on Uniform General Contract Forms; Member, Am. Soc. C. E.; Am. Soc. for Testing Materials; Signal Section, Am. Ry. Assoc.; Military Member, the Soc. of Am. Military Engrs.; Engrs. Club of Hampton Roads (Pres., 1925-26); Virginia Section, Am. Soc. C. E. (Vice-Pres., 1925-26; Pres., 1926-27).

Ralph Budd

(Official Nominee for Director, District No. 7)

Born August 20, 1879, Waterloo, Iowa (Highland Park Coll., B. S. C. E., 1899)—1899-1902, Draftsman, Rodman, and Asst. Engr., Chicago Great Western Ry.: 1902-1906, Roadmaster, Gen. Supt. of Constr., and Div. Engr., Chicago, Rock Island & Pacific Ry.: 1906-1909, Chf. Engr., Panama R. R.: 1909-1912, Chf. Engr., Oregon Trunk Ry.; Spokane, Portland & Seattle Ry.; and Spokane & Inland Empire R. R.: 1913-1918, Asst. to Pres.; Chf. Engr., Great Northern Ry.: 1918, Asst. Regional Director in Chg. of Capital Expenditures, Western Region, U. S. Railroad Administration: 1918-1919, Executive Vice-Pres., Great Northern Ry.: 1919 to date, Pres., Great Northern Ry.: Member, Am. Soc. C. E.

Albert Ferdinand Reichmann

(Official Nominee for Director, District No. 8)

Born January 16, 1868, Dubuque, Iowa. (Grossherzoglich Badische Technische Hochschule, Karlsruhe, Germany)—1890-1891 Draftsman, Lassig

Bridge & Iron Works, Chicago, Ill.: 1891-1894 Draftsman, Computer, and Engr. on Erection, American Bridge Works, Chicago, Ill.: 1894-1901 Engr. in charge of design, Chicago, Milwaukee & St. Paul Ry.; April to July 1901 Engr. in charge of design and Supt. on foundation and structural work, Sargent & Lundy, Chicago, Ill.: July 1901 to date, Div. Engr. American Bridge Co., Chicago, Ill.: Member, Am. Soc. C. E. (Pres., Illinois Section, 1920), Western Soc. of Engrs. (Pres., 1913), Am. Ry. Eng. Assoc., Am. Iron and Steel Inst., Am. Welding Soc., Chicago Engrs.' Club, and Union League Club of Chicago.

Clyde Tucker Morris

(Official Nominee for Director, District No. 9)

Born April 19, 1877, Morrow County, Ohio (Ohio State Univ., C. E., 1898) —1897-1898 Emerson McMillan Fellow in Astronomy, Ohio State Univ., Columbus, Ohio: 1898-1902 detailing, checking, designing, and estimating structural steelwork for New Columbus Bridge Co., Youngstown Bridge Co., and King Bridge Co., in Ohio: 1902-1904 Prin. Asst. Engr., Puget Sound Bridge & Dredging Co., Seattle, Wash., designing and estimating bridges, buildings, docks, dredging, etc.: 1904-1906 Asst. Engr., King Bridge Co., Cleveland, Ohio, designing and estimating structural steelwork for bridges and buildings: 1906-1908 Associate Prof., and 1908 to date, Prof., of Civ. Eng., Ohio State Univ.: 1911-12 Chf. Engr. of Bridges, Ohio State Highway Dept., on leave of absence from the University; 1920-22 Chf. Engr. in charge of design and construction of Ohio Stadium for Ohio State Univ. (seating capacity 63 000); Cons. Engr. on numerous bridge and building projects, including City of Cleveland (1917), clear-water basins; Lower Arch Bridge, at Niagara Falls (1918), associated with Charles Evan Fowler, M. Am. Soc. C. E.; Dresden Suspension Bridge (1914); Ohio River Suspension Bridge, at Point Pleasant, W. Va. (1927), associated with Charles Evan Fowler; foundations and structural steelwork, American Insurance Union Building, Columbus, Ohio (48 stories) (1925): Member, Standing Committee on Research, and Chairman, Special Committee on Concrete and Reinforced Concrete Arches, Am. Soc. C. E.; Member, Advisory Committee on Yadkin River Bridge Tests, U. S. Bureau of Public Roads; Member, Am. Concrete Inst., Soc. for Promotion of Eng. Education, Ohio Eng. Soc., and Engrs. Club of Columbus, Ohio.

Joseph Jacobs

(Official Nominee for Director, District No. 12)

Born Leavenworth, Kans. (Kansas State Univ., B. C. E.)—Except two years with U. S. Geological Survey on stream gauging and examination and survey of reservoir and dam sites for potential irrigation developments, and one year on construction of irrigation works in Arizona, was, prior to 1905, on railroad work in Mexico and the United States, chiefly with the Southern Pacific Co.; had responsible part in preparation of standard plans and specifications for Common Standard Bridges for the

Harriman System: 1905-1910 (except Dec. 1907 to May 1908 on leave in Europe) Cons. and Dist. Engr., U. S. Reclamation Service, on various irrigation developments, including an assignment to Porto Rico Reclamation Service in connection with storage investigation and dam design: 1910 to date (except Oct. 1917 to Sept. 1919, war service in France, as Maj. of Engrs.) private practice as Cons. Engr., Seattle, Wash.; has served many municipalities, irrigation districts, Federal and State Governments, and railroad companies in connection with irrigation, power, water supply, and other engineering developments; served on numerous engineering commissions concerned with Western developments, Cedar River Dam and Storage Project, City of Seattle; Colorado River Project, in connection with irrigation and flood protection of Colorado Delta; Columbia Basin Project for reclamation of 1 800 000 acres of land; Skagit River Power Project for City of Seattle; Member of State Comm. appointed to draft Water Code for State of Washington: Past-Pres., Seattle Section, Am. Soc. C. E.; Past National Director and Past-Pres., Seattle Section, Soc. of Am. Military Engrs.; Past-Pres., Pacific Northwest Soc.; Past-Pres., Washington Irrigation Inst.; Chairman, Irrig. Div., Am. Soc. C. E. (1926); Chairman, Reclamation Committee, Seattle Chamber of Commerce; Director, Washington State Chamber of Commerce; Member, Am. Assoc. of Engrs., Am. Water Works Assoc., and Arctic, Rotary and Cosmos Clubs, of Seattle.

Local Sections*

Baltimore.—October 26, 1928. This was a joint meeting of the Section with the Engineers Club of Baltimore. A special invitation to this meeting was extended to all local members of the American Society of Mechanical Engineers, the American Institute of Electrical Engineers, and the American Institute of Architects. Frank P. McKibben, M. Am. Soc. C. E., of Schenectady, N. Y., spoke on "Welding of Steel Buildings and Bridges". This address was illustrated with lantern slides and was followed by a discussion. Attendance 180.

Dayton.—October 15, 1928. At the first meeting of the season held at the Engineers' Club, Mr. Charles H. Paul outlined the proceedings of the Fall Meeting of the Society at San Diego, Calif. "The Dayton Traffic Problem and Its Proposed Solution" was discussed by Mr. Charlton D. Putnam whose talk was based on the Harris report. Attendance 40.

Illinois.—September 11, 1928. This meeting was known as the "Lincoln Bush Dinner Meeting", at which President Bush and Secretary Seabury were the guests of honor. Jerome A. Moss, President of the Section, gave an introductory speech which was followed by brief addresses by Professor Arthur N. Talbot, of the University of Illinois; Charles F. Loweth, Chief Engineer of the Chicago, Milwaukee, and St. Paul Railway Company; and John A. Garcia, President of the Western Society of Engineers. Secretary Seabury then presented a résumé of his trip abroad during the summer and told of matters relating to Society affairs. Col. Warren Roberts then introduced President Bush, the main speaker for the evening, who gave an illustrated talk on the construction of the Tunkhannock Viaduct. Attendance 64.

Lehigh Valley.—October 8, 1928. A joint dinner meeting of the Section and the Lehigh Valley Engineers' Club was held at Drown Hall, Lehigh University, South Bethlehem, Pa. The speaker for the evening was H. S. Ayres, Hydraulic Engineer for the Hydro-Electric Power Commission of Ontario, who chose as his subject "Hydro-Electric Developments on the Niagara River".

Philadelphia.—October 19, 1928. At the first dinner meeting of the season which was held at the Engineers' Club, Col. Harry H. Blee, Chief, Airport Section, U. S. Department of Commerce, gave an interesting address on "Airports". Colonel Blee described the salient features of an ideal airport, illustrating his address with slides. A discussion followed. Attendance 80.

Sacramento.—September 4, 1928. Messrs. L. W. Fluharty and W. J. Norton, of the University of California Extension Service, addressed the meeting on "Farm Management" and "Visual Education". Attendance 25.

September 11, 1928. A paper on "The Work of the Water Supervisor of the Sacramento and San Joaquin Rivers", was read by Harlowe M. Stafford, Water Supervisor of the Sacramento and San Joaquin Rivers. Attendance 24.

* For list of Local Section Officers, Rules, etc., see 1928 Year Book, p. 46.

September 18, 1928. S. H. Beckett, Associate Professor of Irrigation Investigations and Practise at the Agricultural College, University of California, spoke on "Some Studies in the Economic Use of Irrigation Water". Attendance 33.

September 24, 1928. This was a special dinner meeting of the Section at the Hotel Senator, given in honor of President Bush and Secretary Seabury. President Bush gave an illustrated talk on the construction of the Tunkhannock Viaduct of the Delaware, Lackawanna and Western Railroad, and Secretary Seabury spoke on the work the Society is doing. The day was spent by the two guests in a visit to the Pardee Dam now under construction on the Mokelumne River. Attendance 55.

September 25, 1928. This meeting was devoted to a discussion of "Proposed Legislation Regarding Design, Inspection, and Construction of Dams". Attendance 16.

October 2, 1928. "Testing, as Applied to Concrete" was the subject of a talk by George Lichthart, Chemical Engineer of the State Division of Highways. Attendance 21.

October 9, 1928. The Fifth Annual Ladies' Day Luncheon Meeting was held at the Hotel Sacramento. Miss Jessie Lee Decker, Specialist in Home Furnishing of the University of California Extension Service, spoke on "Furnishing Rural Homes". Attendance 48.

October 13, 1928. Twenty-one members of the Section made an over-night excursion to Salt Springs Dam, on the Mokelumne River, as guests of the Pacific Gas and Electric Company. This dam, now under construction, will be the greatest rock-fill dam ever built, being 300 ft. high above stream bed and containing 3 000 000 cu. yd. of rock.

October 16, 1928. President J. Burdette Brown of the Section gave a report of the Local Section Conference at the San Diego Meeting of the Society, which was attended by eleven members of the Section. Attendance 22.

October 23, 1928. Mr. Everett N. Bryan addressed the meeting on "The Proposed Engineers' Registration Law". Attendance 30.

San Francisco.—August 21, 1928. The regular dinner meeting of the Section was held at the Engineers' Club, at which Professor W. F. Langlier, of the University of California, and Paul E. Magerstadt, Designing Engineer with the East Bay Water Company, were the guests of honor. Various communications and committee reports were read, and an outline was given of an excursion which was held to inspect the construction work in progress on the San Francisco Toll Bridge. The technical program for the evening consisted of a paper entitled "Upper San Leandro Project of the East Bay Water Company", presented by George W. Hawley, Engineer in Charge of the Water Supply Investigation and Construction, East Bay Water Company. Following this paper, three reels of moving pictures showing the project in all stages of construction, from its inception to its completion, were shown. The attendance at the dinner was 93, and at the business and technical meeting, 100.

Engineering Societies Library

The services of the Engineering Societies Library are available to all members who wish searches, copies, translations, etc., or advice on technical literature. A collection of modern books is also available for loan to members in North America, at moderate rentals. Correspondence should be addressed to the Director, Engineering Societies Library, 29 West 39th Street, New York, N. Y., who will gladly give information concerning the charges for the various kinds of work. A more comprehensive statement in regard to this matter will be found on pages 71 and 72 of the Year Book for 1928.

Book Notices*

(October 1 to October 31, 1928)

Die Abwasserreinigung. By H. Bach. Munich & Berlin, R. Oldenbourg, 1927. 183 pp., illus., 9 x 6 in., cloth. 9,60 r.m.

The routine operation of plants for purifying sewage and wastes from mines and factories must be largely left to workmen without special scientific training. This exposition is intended to assist in training these operatives to do their work intelligently.

Anweisung für Mörtel und Beton. By Deutsche Reichsbahn-Gesellschaft. Berlin, Wilhelm Ernst & Sohn, 1928. 71 pp. + 15 pl., 12 x 9 in., paper. 4 r.m.

These official instructions of the German Railroad Company cover in detail the constituents and mixtures of mortar and concrete, the selection and testing of materials, and the approved methods of use and inspection.

Aus der Praxis des Veranschlagens von Eisenbetonbauten. By K. Lerche. Second Edition. Berlin, Wilhelm Ernst & Sohn, 1928. 76 pp., diagrams, tab., 10 x 7 in., paper. 4 r.m.

To aid in preparing bids on reinforced concrete structures, this book gives methods of sufficient accuracy for practical purposes.

Die Berechnung von Fachwerkkranträgern mit Biegungsfestem Obergurt. By Günter Worch. Munich & Berlin, R. Oldenbourg, 1928. 99 pp., diagrams, tab., 10 x 7 in., paper. 6,50 r.m.

The calculation of stresses in crane girders which usually carry the rails directly on their upper flanges has hitherto been largely empirical. This work presents an exact mathematical method, with a number of approximations of sufficient accuracy for practical purposes.

Engineering Education; Essays for English. Selected and Edited by Ray Palmer Baker. Second Edition. N. Y., John Wiley & Sons, 1928. 233 pp., 8 x 5 in., cloth. $2.00.

This collection of essays by noted engineers and scientists covers the origins and types of engineering education and the place in engineering of the basic sciences. Besides providing students with good models of exposition, the collection presents an ideal of education.

Das Förderhöhenverhältnis der Kreiselpumpen für die Ideale und Wirkliche Flüssigkeit. By Wilhelm Schulz. (Forschungsarbeiten, Heft 307.) V. D. I. Verlag, 1928. 28 pp., diagrams, tab., 11 x 9 in., paper. 5 r.m.

The author investigates mathematically the flow of an ideal fluid in radial-discharge centrifugal pumps, including the theoretical delivery, numerical values for all combinations of number of blades, blade angle, and wheel proportions, as compared with those obtained from a commercial pump. New data were obtained on maximum efficiency, special throttle-head curves, favorable numbers of blades and deliveries, and cavitation.

* The statements made in these notices are taken from the books themselves, and this Society is not responsible for them. Unless otherwise specified, the books in this list have been donated by publishers.

Frachtverhältnisse und Frachtlage der Amerikanischen Eisenindustrie. By Fritz von Haniel. Berlin, V. D. I. Verlag, 1928. 62 pp., diagrams, 8 x 6 in., paper. 4 r.m.

This economic study of transportation conditions in the American iron industry covers shipping facilities, tariffs, etc.

Herbert Hoover; A Reminiscent Biography. By Will Irwin. N. Y., Century Co., 1928. 315 pp., illus., ports., 8 x 5 in., cloth. $3.00.

This biography by a college mate and lifelong friend gives an accurate, if eulogistic, account of Mr. Hoover's life and work.

Kraftwerksbauten. By Siemens-Schuckertwerke. Berlin, V. D. I. Verlag, 1928. 101 pp., illus., 12 x 9 in., bound. 5 r.m.

This is a collection of photographs and plans of modern steam-electric and hydro-electric power plants and transformer stations designed by the firm of Siemens-Schuckert.

Ludwig Franzius. By G. de Thierry. (Deutsches Museum Abhandlungen und Berichte.) Berlin, V. D. I. Verlag, 1928. 33 pp., port., 8 x 6 in., paper. 1 r.m.

This brief appreciation of the noted hydraulic engineer, based upon his autobiography, is one of a series issued by the Verein Deutscher Ingenieure and the Deutsches Museum.

Mathematische Strömungslehre. By Wilhelm Müller. Berlin, Julius Springer, 1928. 239 pp., 10 x 7 in., paper. 18 r.m.

This treatise on the motion of fluids for students of mathematics, technical physics, and aviation, occupies a middle ground between the purely systematic and the essentially technical treatment of the subject. The first part develops theory and formulas. The second part covers calculation of forces on rotating cylinders, the theory of aerofoils and propellers, and flow in turbines.

Practical Designing in Reinforced Concrete. By M. T. Cantell. Lond., E. & F. N. Spon; N. Y., Spon & Chamberlain, 1928. 277 pp., illus., diagrams, tab., 9 x 6 in., cloth. 15s.

The work is intended as a concise, practical guide to design. The principles are explained, as well as the methods of procedure. Numerous examples of structures of various types are worked out in full, including those subjected to water, earth, grain, and wind pressures.

Stahl und Eisenbeton im Geschossgrossbau. By Gustav Spiegel. Berlin, Julius Springer, 1928. 37 pp., diagrams, tab., 10 x 7 in., paper. 1.90 r.m.

This comparison of steel and reinforced concrete construction shows the comparative merits of both materials and enables builders to determine which is the cheaper and more satisfactory under any given conditions.

Strain Energy Methods of Stress Analysis. By A. J. Sutton Pippard. Lond. & N. Y., Longmans, Green & Co., 1928. 146 pp., diagrams, 9 x 6 in., cloth. $5.00.

Although Castigliano's classic work on elastic stresses in structures is available in English, it is difficult for the student. The present book fills the gap between the general theory of structures and the original treatise. The first section contains the theory of the method. The second shows applications to typical designs for airplanes, roof trusses, bow girders, and fly-wheels.

Additions to the Reading Room

Elements of Highway Engineering. By Arthur H. Blanchard and Roger L. Morrison, Members, Am. Soc. C. E. Second Edition. N. Y., John Wiley & Sons, Inc. Lond., Chapman & Hall, Ltd., 1928. 365 pp., illus., diagrams, tab., 9 x 6 in., cloth. $3.75. (Gift of Mr. Blanchard and John Wiley and Sons.)

The object of the present volume, which represents more of a rewriting than a revision, has been to present fundamental principles rather than to give many specifications and details of construction and maintenance methods. A new chapter on "Highway Transport Surveys" has been included, also an introduction which is intended to give the reader a preliminary view of the entire subject of highway engineering.

Current Civil Engineering Literature

Key to Abbreviated References to Publications Indexed*

Abbreviated References.	Publication.	Place.
Am. C. Inst.	*American Concrete Institute, Proceedings* (Y.)	Detroit
A. I. E. E.	*American Institute of Electrical Engineers Journal* (M.)	New York
A. R. E. A.	*American Railway Engineering Association, Proceedings* (Y.)	Chicago
A. S. T. M.	*American Society for Testing Materials, Proceedings* (Y.)	Philadelphia
Am. Soc. C. E.	*American Society of Civil Engineers, Proceedings* (M.)	New York
Am. Soc. Mun. Impvts.	*American Society for Municipal Improvements, Proceedings* (Y.)	New York
Am. W. W. Assoc.	*American Water Works Association, Journal* (M.)	Baltimore
Am. Wood Prs. Assoc.	*American Wood Preservers Association, Proceedings* (Y.)	Chicago
Ann. P. et C.	*Annales des Ponts et Chaussées* (Bi-M.)	Paris
Ann. T. P. Belg.	*Annales des Travaux Publics de Belgique* (Bi-M.)	Brussels
Assoc. Ing. Gand.	*Annales de l'Association des Ingénieurs sortis des Ecoles Spéciales de Gand* (Q.)	Ghent
Bost. Soc. C. E.	*Boston Society of Civil Engineers, Journal* (M.)	Boston
Can. Engr.	*Canadian Engineer* (W.)	Toronto
City Plan.	*American City Planning Institute* (Q.)	Boston
Comwlth. Engr.	*Commonwealth Engineer* (M.)	Melbourne
Conc.	*Concrete* (M.)	Chicago
Cornell C. E.	*Cornell Civil Engineer* (M.)	Ithaca
Dock & Harbour	*Dock and Harbour Authority* (M.)	London
Eng.	*Engineering* (W.)	London
Eng. & Contr.	*Engineering and Contracting* (M.)	Chicago
Eng. Inst. Can.	*Engineering Institute of Canada, Journal* (M.)	Montreal
Eng. N. R.	*Engineering News-Record* (W.)	New York
Engr. Soc. W. Pa.	*Engineers' Society of Western Pennsylvania, Journal* (M.)	Pittsburgh
Engr.	*Engineer* (W.)	London
Engrs. & Eng.	*Engineers and Engineering, Engineers' Club of Philadelphia* (M.)	Philadelphia
Gas und Wasser.	*Gas und Wasserfach*	Munich
Gen. Civ.	*Le Génie Civil* (W.)	Paris
Gesund. Ing.	*Gesundheits Ingenieur* (W.)	Munich
Inst. C. E.	*Institution of Civil Engineers Minutes of Proceedings* (Q.)	London
Inst. Mun. & Co. Engrs.	*Institution of Municipal and County Engineers, Journal* (W.)	London
Int. Ry. Cong. Assoc.	*International Railway Congress Association, Bulletin* (M.)	Brussels
Land. Arch.	*Landscape Architecture* (Q.)	Boston
Mech. Eng.	*Mechanical Engineering* (M.), *Journal of the American Society of Mechanical Engineers*	New York
Mil. Engr.	*Military Engineer* (Bi-M.)	Washington
Min. & Metal.	*Mining and Metallurgy* (M.), *American Institute of Mining Engineers*	New York
Mun. N. & W. W.	*Municipal News & Water Works* (M.)	Chicago
N. E. W. W. Assoc.	*New England Water Works Association, Journal* (Q.)	Boston
N. Y. R. R. Club	*New York Railroad Club, Proceedings* (M.)	Brooklyn
Oest. Ing. Arch. Ver.	*Oesterreichischer Ingenieur und Architekten Verein, Zeitschrift* (F.)	Vienna
Power	*Power* (W.)	New York
Public W.	*Public Works* (M.)	New York
Rev. Gen.	*Revue Générale des Chemins de Fer* (M.)	Paris
Ry. Age	*Railway Age* (W.)	New York
Ry. Eng. & Main.	*Railway Engineering and Maintenance* (M.)	Chicago
R. & S.	*Roads and Streets* (M.)	Chicago
Schw. Bauz.	*Schweizerische Bauzeitung* (W.)	Zurich
Sci. Am.	*Scientific American* (M.)	New York
Soc. Ing. Civ. Fr.	*Société des Ingénieurs Civils de France, Mémoires et Comptes Rendus* (Q.)	Paris
Tech. Gemein.	*Technisches Gemeindeblatt* (F.)	Berlin
Ver. deu. Ing.	*Verein deutscher Ingenieure, Zeitschrift* (W.)	Berlin
West. Constr. N.	*Western Construction News* (F.)	San Francisco
West. Ry. Club	*Western Railway Club, Proceedings* (M.)	Chicago
West. Soc. Engrs.	*Western Society of Engineers, Journal* (M.)	Chicago
Zeit. Bau.	*Zeitschrift für Bauwesen* (Q.)	Berlin
Z. d. Bauver.	*Zentralblatt der Bauverwaltung* (W.)	Berlin

* Y = Yearly; Q = Quarterly; M = Monthly; F = Fortnightly; W = Weekly.

A. Applied Sciences

a. Processes of Calculation

One Hundred Fifty Years Advance in Structural Analysis. Discussion: S. Timoshenko, Alfred D. Flinn, and Jacob Feld. Am. Soc. C. E. Oct., '28.

3. Stresses and Strains

Influence of Intermittent Stresses on the Strength and Endurance of Steel Structures.* C. A. P. Turner. Oest. Ing. Arch. Ver. Sept. 21, '28.

B. Applied Mechanics

a. Mechanics of Solids

1. Processes of Measurement and Method of Testing

Tests Yield Formulas for Steel I-Sections in Torsion.* William B. Campbell. Eng. N. R. Oct. 11, '28.

4. Riveted Systems

Stresses in Rivet Work.* S. Bylander. Oest. Ing. Arch. Ver. Sept. 21, '28.

Die Stabilität räumlicher Stabverbindungen.* (The Stability of Special Rod Connections.) Friedrich Bleich and Hans Bleich. Oest. Ing. Arch. Ver. Sept. 21, '28.

5. Homogeneous Inelastic Solids

A Proposed Formula for Columns.* Discussion: William R. Osgood. Am. Soc. C. E. Oct., '28.

b. Hydraulics

2. Elastic Solids

Cost of Excavating With Small Trenching Machines. H. S. Greene. Am. W. W. Assoc. Oct., '28.

Modern Practice in Cast Iron Pipe Manufacture. R. J. Disher. Am. W. W. Assoc. Oct., '28.

Control of Stresses in Pipe Line Construction.* Lloyd T. Jones and Walter S. Weeks. Am. W. W. Assoc. Oct., '28.

3. Industrial Hydraulics

Mersey River Hydro Power Development.* H. W. Mahon. Can. Engr. Sept. 25, '28.

Conowingo Power Plant, Susquehanna River.* Cornell C. E. Oct., '28.

Silting of the Lake at Austin, Texas.* Discussion: P. A. Welty, Banks McLaurin, R. G. Tyler and E. C. H. Bantel. Am. Soc. C. E. Oct., '28

Hydro Terminal Station at Leaside, Ont.* Can. Engr. Oct. 2, '28.

Highest Head Hydro-Electric Development in America.* Edgar A. Brown. Power Oct. 9, '28.

The Centrifugal Pump, Its Operation and Characteristics.* M. Spillman. Power Oct. 16, '28.

Das Kraftwerk Lilla Edet.* (The Lilla Edet Power Plant.) A. Ekwall and H. Munding. Ver. deu. Ing. Sept. 29, '28.

4. Dams

Coolidge Dam Construction Plant.* H. B. Hull and Henry Algert. West. Constr. N. Sept. 25, '28.

Hydrostatic Uplift in Pervious Soils.* Discussion: Martin J. McPike and Jacob Feld. Am. Soc. C. E. Oct., '28.

Baffle-Pier Experiments on Models of Pit River Dams.* Discussion: J. C. Stevens. Am. Soc. C. E. Oct., '28.

Analysis of Arch Dams by the Trial Load Method.* Discussion: J. L. Savage and Ivan E. Houk, and Fred A. Noetzli. Am. Soc. C. E. Oct., '28.

c. Pneumatics

2. Physical Pneumatics

Florida Storm Damage Confined Largely to Poorly Built Structures.* R. S. Tilden. Eng. N. R. Oct. 4, '28.

The Florida Hurricane of 1926.* Robins Fleming. Eng. Oct. 12, '28.

C. Materials of Construction and General Processes

a. Lime, Cement, Mortar, Concrete, Brick, Bitumen, Timber, Gravel, etc.

Determination of Proportions of Constituents in Concrete. (From *Public Roads.*) R. & S. Sept., '28.

The Compressibility of Sand-Mica Mixtures. Discussion: Jacob Feld. Am. Soc. C. E. Oct., '28.

Spécifications Générales pour les Ciments Portland Artificiels. (General Specifications for Artificial Portland Cements.) Assoc. Ing. Gand. Pt. 2. '28.

Progrès Récents Réalisés dans la Fabrication et l'Utilisation des Ciments Magnesiens.* (Recent Progress in the Manufacture and Use of Magnesian Cements.) Gen. Civ. Sept. 1, '28.

Ueber die Verwendung getränkter Hölzer bei Wasserbauten.* (On the Use of Impregnated Timber in Aqueous Constructions.) Hagen. Z. d. Bauver. Sept. 12, '28.

b. Metals

Les nouvelles Aciéries de l'Appleby Iron Co. á Scunthorpe (Angleterre).* (The New Steel Works of the Appleby Iron Co. at Scunthorpe, England.) Gen. Civ. Sept. 1, '28.

Was ist Ermüdung?* (What is Fatigue?) K. Laute and G. Sachs. Ver. deu. Ing. Aug. 25, '28.

Ein neuer hochwertiger Baustahl.* (A New High Grade Structural Steel.) J. Kuhnke. Z. d. Bauver. Sept. 5, '28.

Ueber die Korrosion des Eisens.* (On the Corrosion of Iron.) Wilhelm van Wüllen Scholten. Gas und Wasser. Sept. 8, '28.

c. Preservation and Use of Materials, Painting, Waterproofing

The Preservation of Douglas Fir by Pressure Creosoting.* K. W. Hicks. Eng. Inst. Can. Sept., '28.

e. Earthwork, Cubage, Excavating Machinery

Les Excavateurs-Portiques à Câble pour l'Exploitation des Gisements de Lignite.* (Cable Excavators for Working Lignite Deposits.) Gen. Civ. Sept. 22, '28.

f. Rock Excavation, Mining, Rock Removal

Grossraumförderung in Braunkohlen-Tagebaubetrieben mit Schrägaufzügen.* (Haulage in Open-Pit Lignite Mines with Inclined Elevators.) F. Isermann. Ver. deu. Ing. Sept. 8, '28.

g. Execution of Works, Specifications

Additions and Alterations to the Store of the Kaufmann and Baer Company, Now Gimbel Brothers, Inc., for the Estate of Henry W. Oliver. C. S. Davis. Engrs. Soc. W. Pa. June, '28.

3. Of Wood

Better Practices in Constructing Frame Buildings.* (From subcomm. report of Nat'l Comm. on Wood Utilization.) Ry. Eng. & Main. Oct. '28.

4. Of Metal

The Inspection of Structural Steel. Donald L. MacDonald. Bost. Soc. C. E. Sept., '28.

The Design of Tall Building Frames to Resist Wind.* Discussion. David C. Coyle, Albert Smith, Robins Fleming, and Everett E. Ebling. Am. Soc. C. E. Oct., '28.

Die neuen österreichischen breitflanschigen Waltzträger.* (The New Austrian Broad-Flanged Rolled Beams.) Aug. Kroitzsch. Oest. Ing. Arch. Ver. Sept. 21, '28.

5. Of Reinforced Concrete

Capping Structural Steel Cores in Reinforced-Concrete.* R. C. Reese. Eng. N. R. Oct. 18, '28.

h. Foundations, Bridge Piers and Abutments

Use Bulk Cement Delivered by Boat on Foundation Contract for Largest Building.* Eng. & Contr. Oct., '28.

The Science of Foundations—Its Present and Future.* Discussion: Arthur M. Shaw. Am. Soc. C. E. Oct., '28.

Technique of Pressure Grouting of Foundations.* R. McC. Beanfield. West. Constr. N. Oct. 10, '28.

i. Coffer-dams

Sheet Pile Cofferdams for the Arlington Memorial Bridge.* Eng. Sept. 28, '28.

j. Piles and Pile-driving

Swanage Pier Repairs.* M. Du-Plat-Taylor.* Inst. Mun. & Co. Engrs. Oct. 16, '28.

D. Highways

a. Location

Notes on Laying Out Roads for Pleasure Travel in Scenic Areas. Frederick Law Olmstead. City Plan. Oct., '28.

c. Construction

Traffic Bound Road Making.* S. Silver Davson. Comwlth. Engr. Sept., '28.

Bituminous Macadam Construction in Victoria.* R. W. Parkhurst. Comwlth. Engr. Sept., '28.

Asphalt Surface Treatments on West Virginia State Roads.* B. E. Gray. (Paper read before Asphalt Assoc.) Sept., '28.

Obtaining Efficiency in Concrete Road Construction. R. & S. Sept., '28.

Rational Design of Asphalt Paving Mixtures for City and Rural Pavements.* Hugh W. Skidmore and Gene Abson. Mun. N. & W. W. Sept., '28.

Methods of Resurfacing With Emulsified Asphalt Penetration Macadam in European Countries.* C. L. McKesson (Paper read before West. Assoc. State Highway Officials). Mun. N. & W. W. Sept., '28.

Lowering End of Causeway on California Highway.* C. E. Bovey (From *California Highways and Public Works.*) R. & S. Sept., '28.

Road Construction Costs and Asphalt. John A. Caskie. Inst. Mun. & Co., Engrs. Sept. 18, '28.

Fast Concrete Roadbuilding Under Rush Orders.* A. J. Wise. Eng. N. R. Sept. 27, '28.

Rhode Island Highway Testing Department.* David D. Bouchard. Pub. W. Oct., '28.

Widening Brick Streets in St. Petersburg.* York Briddell. Pub. W. Oct., '28.

Skyline Boulevard, San Francisco to Santa Cruz.* Philip Schuyler. West. Constr. N. Oct. 10, '28.

Les Enduisages d'Empierrement en France et les Revetements Speciaux de la Voirie Parisienne.* (Coatings for Macadam Roads in France and Special Coatings for the Streets of Paris.) Claeys. Ann. T. P. Belg. Pt. 4, '28.

d. Maintenance

Street Maintenance Organization and Operation In a Small City. E. A. Lawver. (Paper read before Univ. of Col.) Mun. N. & W. W. Sept., '28.

Salvaging Old Surfaces With Bituminous Macadam. T. E. Huffman. (Paper read before College Station, Texas.) Mun. N. & W. W. Sept., '28.

g. Machinery and Tools

The Land Leveler As a Medium of Earth Transportation in Sub-Grade Construction.* W. H. Ballard. R. & S. Sept., '28.
Road Construction Plant. W. S. Lunn. Inst. Mun. & Co. Engrs. Sept. 18, '28.
The Land Leveler as a Medium of Earth Transportation in Sub-Grade Construction.* W. H. Ballard. Eng. & Contr. Oct., '28.
The Element of Haul in Grading. J. L. Harrison. Eng. & Contr. Oct., '28.
Home-Made Power Maintainer for Gravel and Stone Roads.* Ben H. Petty. Eng. N. R. Oct. 18, '28.

h. Vehicles, Automobiles, Traffic

Traffic Engineering in San Francisco.* Eng. N. R. Oct. 11, '28.

E. Bridges, Viaducts and Arches

b. Iron and Steel Bridges and Viaducts

Hudson River Highway Bridge to Span 3 500 Ft.* R. & S. Sept., '28; Eng. & Contr. Oct., '28.
Revamping Steel Viaduct to Carry Street Over Railroad.* Theodore Doll and Jack Singleton. Eng. N. R. Sept. 27, '28.
Simple Expedient Solves Problem in Bridge Erection.* P. G. Lang, Jr. Ry. Eng. & Main. Oct., '28.
Design and Construction of Highway Bridges, With Special Reference to Floors and Deckings.* E. Taylor. Inst. Mun. & Co. Engrs. Oct. 16, '28.
Building Rapid-Transit Viaduct, Kansas City.* S. E. Berkenblit. Eng. N. R. Oct. 18, '28.
La Réparation et le Renforcement du Viaduc en Fonte sur le Rhône à La Voulte au Moyen d'Eléments Métalliques et de Béton Armé de Boulongne. Oest. Ing. Arch. Ver. Sept. 21, '28.
Calcul des Arcs et des Poutres Continues de Hauteur Variable à Treillis en N.* (Calculation of Arches and Continuous Trellis N-Beams of Variable Height.)* F. Chaudy. Gen. Civ. Sept. 22, '28.
Die Förderbahnbrücke über die Hauptbahn Berlin-Hannover beim Bau des Mittellandkanals.* (The Freight Railway Bridge above the Berlin-Hannover Main Line during the Construction of the Mittelland Canal.) Z. d. Bauver. Sept. 5, '28.
Einige neue Brückenbauten der Oesterreichischen Bundesbahnen.* (Some New Bridge Constructions for the Austrian State Railways.) Rudolf Kern. Oest. Ing. Arch. Ver. Sept. 21, '28.

d. Concrete and Reinforced Concrete Bridges and Viaducts

San Francisco Bay Toll Bridge.* H. C. Boyden. West. Constr. N. Sept. 25, '28.
Design and Construction of Highway Bridges, With Special Reference to Floors and Deckings.* E. Taylor. Inst. Mun. & Co. Engrs. Oct. 16, '28.
Avantages des Armatures Rigides pour la Construction des Grands Arcs en Béton Armé.* (Advantages of Rigid Reinforcing for the Construction of Large Reinforced Concrete Arches.) J. Eugenio Ribera. Oest. Ing. Arch. Ver. Sept. 21, '28.
Die neue Piave-Brucke in Belluno.* (The New Piavo Bridge in Belluno.) P. Neményi. Z. d. Bauver. Sept. 12, '28.
Die Kainachbrücke bei Lieboch.* (The Kainach Bridge at Lieboch.) Sepp Heidinger, Oest. Ing. Arch. Ver. Sept. 21, '28.

f. Suspension Bridges, Transfer Bridges

Design of Great International Suspension Bridge Over Detroit Bridge.* Jonathan Jones. Eng. N. R. Sept. 27, '28.
The Stiffness of Suspension Bridges. Discussion: Lloyd G. Frost and Hans H. Rode. Am. Soc. C. E. Oct., '28.

g. Swing, Bascule, Lift, Floating, Oscillating Bridges, Traveling Cranes

Chicago Bascule Bridge Erected Over Railroad Track.* Eng. N. R. Oct. 11, '28.

h. Computation, Tests, etc.

Continuous Beams Over Three Spans. Discussion: W. F. Way. Am. Soc. C. E. Oct., '28.
The Present Position as Regards the Question of Dynamic Influences on Railway Bridges. A. Ronsse and R. Desprets. Int. Ry. Cong. Assoc. Sept., '28.
Das elektrische Schweissen im Eisenbau.* (Electric Welding in Iron Construction.) Stefan Bryla. Oest. Ing. Arch. Ver. Sept. 21, '28.
Calcul de L'Arc Parabolique à Deux Rotules Prolongé par des Poutres non Articulées, Reposant sur Appuis Mobiles.* (Calculation of the Parabolic Arc with Two Hinges Prolonged by Non-Articulated Beams Resting on Mobile Supports.) Gen. Civ. Sept. 1, '28.
Dynamische Spannungen in Brücken und deren Untersuchung.* (Dynamic Stresses in Bridges and Their Investigation.) Josef Geiger. Oest. Ing. Arch. Ver. Sept. 21, '28.
Schwingingsprüfmaschine zur Untersuchung von Brücken, System Spaeth.* (Vibration Testing Machines for Investigating Bridges by the Spaeth System.) Oest. Ing. Arch. Ver. Sept. 21, '28.

F. Inland Waters

c. Regulation of Waterways—Volume of Discharge, Freshets, Floods, Soundings

Ice Engineering. Howard T. Barnes. Bost. Soc. C. E. Sept., '28.
Mississippi River Flood Control.* Pub. W. Oct., '28.
Hydraulic Studies and Operating Results on the Miami Flood Control System. Discussion: B. F. Jakobsen. Am. Soc. C. E. Oct., '28.

d. Roads and Outer Harbors. Dikes and Jetties. Breakwaters

Die Zwillingsschachtschleuse bie Fürstenberg a. d. Oder.* (The Twin-Shaft Lock at Fürstenberg on the Oder.) E. Möller. Ver. deu. Ing. Sept. 22, '28.
Betriebseinrichtungen und Bau der Fürstenberger Schleuse.* (Working Arrangements and Construction of the Fürstenberg Locks.) E. Möller. Ver. deu. Ing. Sept. 29, '28.

g. Consolidation of Banks, Leakage, Maintenance of Channel

Herstellung eines Lippe-Durchstiches beim Bau des Kanals Wesel-Datteln.* (Changing the Course of the Lippe in the Construction of the Wesel-Datteln Canal.) Baertz. Z. d. Bauver. Sept. 26, '28.

G. Maritime Works

a. Behavior of Movements of the Ocean

Inlets on Sandy Coasts.* Discussion: Morrough P. O'Brien, Elliott J. Dent, Augustus Smith, and Victor Gelineau. Am. Soc. C. E. Oct., '28.

c. Vessels and Maritime Navigation, Lighthouses, Buoys, Various Signals

The P. & O. Turbo-Electric Liner "Viceroy of India." Eng. Sept. 21, '28.

i. Harbors (General Articles)

Kiel Changes Over to a Commercial Port.* R. S. MacElwee. Dock & Harbour Oct., '28.

j. Dockyard Machinery and Shipyards, Dry Docks

New Floating Dock at Rouen.* Dock & Harbour Oct., '28.

H. Railroads. Street and Interurban Railways. Automobiles. Aeronautics

a. Railroads

1. General Articles

Frisco Opens Route Into Pensacola.* Ry. Age Oct. 13, '28.
Double Tracking on the Missouri Pacific Railroad.* Eng. N. R. Oct. 18, '28.
Les Chemins de Fer Allemands Pendant le Troisième Exercise Financier de la Reichsbahn.* (German Railways During the Third Fiscal Year of the Reichsbahn.) Rev. Gen. Sept., '28.

4. Track

Mechanical Injury to Crossties Ascribed to Wear.* H. von Schrenk. (From Bulletin 306, Am. Ry. Eng. Assoc.) Ry. Age Sept. 22, '28.
The Relation Between the Manufacture and Service of Rails. C. B. Bronson. (Paper read before Roadmasters' & Main. of Way Assoc.) Ry. Eng. & Main. Oct., '28.
The Essentials of High Speed Track. J. F. Deimling. (Paper read before Roadmasters' & Main. of Way Assoc.) Ry. Eng. & Main. Oct., '28.
Methods of Preventing and Overcoming Damage to Rail Ends. (Report of Comm. read before Roadmasters' & Main. of Way Assoc.) Ry. Eng. & Main. Oct., '28.
Permanent Track Construction on the Pere Marquette.* Paul Chipman. (Paper read before Roadmasters' & Main. of Way Assoc.) Ry. Eng. & Main. Oct., '28.
Dynamik und Schwingungen des Eisenbahnoberbaues.* (Dynamics and Vibrations of Railway Permanent Way.) Saller. Ver. deu. Ing. Sept. 22, '28.
Die Hochbauten des neuen Grenz-und Zollbahnhofes Perl.* (The Buildings for the New Perl Frontier and Customs Station.) Albermann. Z. d. Bauver. Sept. 26, '28.

5. Signals and Safety Apparatus

Accidents and Protective Devices at Grade Crossings. E. Irvine Rudd. (Abstract of paper read before Public Utility Commission Engrs.) Ry. Age Sept. 22, '28.
Pere Marquette Installs Centralized Control Signal System.* Ry. Age Oct. 6, '28.

6. Rolling Stock (Locomotives, Cars) Fuel

To Study Truck Action.* Ry. Age. Sept. 22, '28.
Auxiliary Locomotive Tested on the Plant at Altoona.* Ry. Age Sept. 29, '28.
Missouri Pacific Finds Extended Engine Runs Profitable.* Ry. Age Oct. 6, '28.

7. Use of Electricity

Diversified Electric Power Applications Found at Paducah Shops.* Ry. Age Oct. 20, '28.
Grossgleichrichter für die Elektrifikation der Illinois Central Railroad (U. S. A.).* (Large Rectifiers for the Electrification of the Illinois Central Railroad (U. S. A.)) A. Danz. Schw. Bauz. Sept. 1, '28.

8. Stations, Terminals, Engine Houses, Shops

Lehigh Valley Consolidates Inter-Shop Transport.* Ry. Age Oct. 13, '28.
Big Four Completes New Terminal at Cincinnati.* Ry. Age Oct. 20, '28.
Les Travaux d'Agrandissement de la Gare de l'Est à Paris.* (The Work of Enlarging the Gare de l'Est in Paris.) Rev. Gen. Sept., '28.

b. Special Railroads

Le Funiculaire Aérien de Cortina d'Ampezzo. Règlements Divers Concernant les Funiculaires pour Voyageurs.* (The Cortina d'Ampezzo Aerial Cableway. Various Regulations for Passenger Cableways.) F. Crestin. Gen. Civ. Sept. 1, '28.
Railroad-Owned Air Line Proposed. C. W. Kelsey. Ry. Age Sept. 22, '28.
British Railways Authorized to Operate on Highways. Alfred W. Arthurton. Ry. Age Sept. 22, '28.

d. Street Railways, Elevated Railways, Subways

1. General Articles

Hausunterfahrungen beim Untergrundbahnbau in Berlin.* (Working under Houses in the Construction of the Subway in Berlin.) Erich Biermann. Z. d. Bauver. Sept. 19, '28.

f. Aeronautics

2. Dirigible Balloons

The Zeppelin Airship LZ 127.* Engr. Oct. 5, '28.

3. Aeroplanes

The Automatic Control of Aeroplanes.* Eng. Oct. 12, '28.

4. Aerodromes and Landing Fields

The Oakland Airport.* H. C. Boyden. West. Constr. N. Sept. 25, '28.

I. Municipal Water-Works. Agricultural Engineering. Irrigation

a. General Articles

The Design and Equipment of Water-Works Laboratories. Melville C. Whipple. N. E. W. W. Assoc. Sept., '28.

The San Francisco Water Supply.* G. A. Elliott. Am. W. W. Assoc. Sept., '28.

The Management of Water Works Business. George H. Fenkell. Am. W. W. Assoc. Sept., '28.

Water Works Practice. Am. W. W. Assoc. Sept., '28.

How to Beautify Grounds Surrounding a Water Works. Jas. D. Fowler. (Paper read before S. W. W. A.) Mun. N. & W. W. Sept., '28.

The Water Supply of Caracas, Venezuela.* Thorndike Saville. N. E. W. W. Assoc. Sept., '28.

The Water Supply of Aukland.* W. E. Bush. (Paper read before New Zealand Soc. C. E.) Comwith. Engr. Sept., '28.

Thinking "South African" in Engineering. T. George Caink. Inst. Mun. & Co. Eng. Sept. 18, '28.

The Wanaque Water Supply Project.* James H. Lyon. Cornell C. E. Oct., '28.

Water Supply of Los Angeles. William Mulholland. Am. W. W. Assoc. Oct., '28.

Water Supply Problems of a Desert Region.* William E. Rudolph. Am. Soc. C. E. Oct., '28.

St. Just Sewerage and Waterworks.* Fred C. Uren. Inst. Mun. & Co. Engrs. Oct. 2, '28.

b. Hydrology, Water Resources

Study of Record Rainstorm at Louisville, Ky.* Woolsey M. Caye. Eng. N. R. Oct. 18, '28.

c. Dams and Reservoirs

The St. Francis Dam Failure. A. J. Wiley. Am. W. W. Assoc. Sept., '28.

Failure of the St. Francis Dam. D. C. Henny. Am. W. W. Assoc. Sept., '28.

Cableways for the Nag Hammadi Barrage.* Engr. Sept. 14, '28.

Load Distribution in High Arch Dams.* Discussion: Paul Bauman and A. Floris. Am. Soc. C. E. Oct., '28.

Upward Pressures Under Dams: Experiments by the United States Bureau of Reclamation.* Discussion: Ivan E. Houk, C. H. Howell, P. Wilhelm Werner, and H. deB. Parsons. Am. Soc. C. E. Oct., '28.

Die Talsperre bei Boberullersdorf.* (The Dam at Boberullersdorf.) Bachmann. Z. d. Bauver. Aug. 22, '28.

Die O'Shaugnessy-Talsperre in Ohio, eine gradlinige Schwergewichtsmauer.* (The O'Shaugnessy Dam in Ohio, a Straight Gravity Dam.) Schmidt. Z. d. Bauver. Sept. 26, '28.

d. Analysis and Purification of Water

A New Indicator for Chlorine. Knut Alfthan. Am. W. W. Assoc. Sept., '28.

Preparation of the Ortho-Tolidine Reagent for Free Chlorine. C. S. Boruff, S. J. Vellenga and R. H. Phelps. Am. W. W. Assoc. Sept., '28.

Water Purification and Softening Plant at Piqua, O.* J. M. Montgomery. (Paper read before Ohio Water Purification Conference.) Mun. N. & W. W. Sept., '28.

Methods of Water Treatment at Chain of Rocks and Harvard Bend Plants, St. Louis. L. A. Day. (Paper read before Texas W. W. Short School.) Mun. N. &. W. W. Sept., '28.

Automatic Synchronous Stop and Relief Valves for Mokelumne Aqueduct.* F. W. Hanna. West. Constr. N. Sept. 25, '28.

Succinchlorimide for the Treatment of Small Quantities of Potable Water. Cyrus B. Wood. Am. W. W. Assoc. Oct., '28.

Water Hardness, Its Effect and Its Removal. Rudolph E. Thompson. Am. W. W. Assoc. Oct., '28.

Chloro-Phenol Tastes From Creosoted Wood Stave Pipe. Dana E. Kepner. Am. W. W. Assoc. Oct., '28.

Chlorinated Copperas—A New Coagulant.* L. L. Hedgepeth and Others. Am. W. W. Assoc. Oct., '28.

Algæ Control by Creating Turbidity at Louisville, Ky.* W. H. Lovejoy. Eng. N. R. Oct. 4, '28.

Kropf and Trinkwasser.* (Goiter and Drinking Water.) Wagner-Jauregg. Gas und Wasser. Aug. 25, '28.

Der Filter- und Spülvorgang in offenen Enteisenungsanlagen.* (The Filtering and Rinsing Process in Open Iron-Removal Plants.) G. Theim. Gas und Wasser. Sept. 1, '28.

e. Distribution of Water

Distribution System Maintenance. (Report read before Supts.' Conference.) N. E. W. W. Assoc. Sept., '28.

Service Pipes and Meters. (Report read before Supts.' Conference.) N. E. W. W. Assoc. Sept., '28.
Some Experimental Studies of External Corrosion of Copper and Brass Service Pipe.* K. H. Logan and S. P. Ewing. Am. W. W. Assoc. Sept., '28.
Unaccounted for Water.* L. R. Howson. Am. W. W. Assoc. Sept., '28.
Electrolytic Corrosion Prevention of Condenser Tube Corrosives.* F. G. Philo. Am. W. W. Assoc. Oct., '28.
Water Mains on Bridges. Pub. W. Oct., '28.
Nevada Irrigation District, California.* Harold I. Wood. West. Constr. N. Oct. 10, '28.
Zeitgemässe Technik im Wassermesserbau.* (Modern Technique in the Construction of Water Meters.) Denkert. Gas und Wasser. Aug. 11, '28.
Erweiterung des Städtischen Wasserwerkes Bologna.* (Enlargement of the Bologna Municipal Water Works.) A. Natale. Gas und Wasser. Aug. 18, '28.

J. Sewerage. Sewage and Refuse Disposal

b. Sewage Disposal, Purification

The Economic Side of Sewage Disposal. N. T. Veatch. (Paper read before Iowa Sewage Treatment Conference.) Mun. N. &. W. W. Sept., '28.
Activated-Sludge Plant Produces Fertilizer at Pasadena.* Eng. N. R. Sept. 27, '28.
The Sewage Disposal Works of Decatur, Illinois.* Samuel A. Greeley, and William D. Hatfield. Am. Soc. C. E. Oct., '28.
Sewage Treatment on the Jersey North Shore. I. Russell Riker. (From paper read before N. J. Sewage Works Assoc.) Pub. W. Oct., '28.
Separate Sludge Digestion Experiences.* Anthony J. Fischer. (Paper issued by Dept. Sewage Disposal, N. J. Agricultural Experiment Station.) Pub. W. Oct., '28.
The Activated Sludge Plant at Grand Canyon National Park, Arizona. Jane H. Rider. (Paper read before Texas W. W. Short School.) Mun. N. & W. W. Oct., '28.
Disposal of Packing House Waste by Irrigation at Laredo, Texas.* Chester Cohen. Pub. W. Oct., '28.
Experimenting With Sludge Lagooning at Waco, Texas.* V. M. Ehlers and Chester Cohen. Pub. W. Oct., '28.
Improved Sewerage System and Ocean Outfall, Santa Cruz, California.* Charles Gilman Hyde. West. Constr. N. Oct. 10, '28.
Largest Activated-Sludge Plant in the World.* Eng. N. R. Oct. 11, '28.
Submerged Contact Aerators for Sewage Treatment.* A. M. Buswell. Eng. N. R. Oct. 18, '28.

c. Refuse Disposal

Power from Refuse in Glasgow. Pub. W. Oct., '28.

K. Heat Engines

a. Steam Engines, Boilers

The Design and Construction of High-Pressure Water-Tube Boilers.* H. E. Yarrow. (Paper read before British Assoc.) Eng. Sept. 14, '28.

c. Gas and Oil Engines

Oil Engines for Aircraft and Railways.* A. E. L. Chorlton. (Paper read before British Assoc.) Eng. Sept. 21, '28.

L. Electricity

b. Distribution and Transmission of Electricity

1. Power Plants

Design Studies for Gould Street Generating Station.* F. T. Leilich and Others. A. I. E. E. Oct., '28.
10,000-Kw. Turbo-Generator and Condenser at Stonebridge Park Power Station.* Eng. Oct. 5, '28.

2. Long-Distance Transmission of Energy

220-Kv. Transmission Line for the Conowingo Development.* P. H. Chase. A. I. E. E. Oct., '28.
L'Emploi des Câbles Souterrains pour la Transmission de l'Energie Electrique sous Haute Tension.* (The Use of Underground Cables for the Transmission of High Tension Electricity.) V. Planer. Gen. Civ. Sept. 1, '28.
Traversée de la Seine, près de Bezons, par des lignes à 10 000 Volts, sur Poteaux en Béton Armé Centrifugé.* (Crossing the Seine near Bezons by 10,000 Volt Lines on Reinforced Concrete Poles Cast Centrifugally.) C. Villiers. Gen. Civ. Sept. 22, '28.

3. Distribution and Wiring of Electricity

Weld Efficiency in Penstock Pipe Using Overlap Welds.* Oren Reed. Eng. N. R. Oct. 11, '28.
Das elektrische Schweissen im Eisenbau.* (Electric Welding in Iron Construction.) Stefan Bryla. Oest. Ing. Arch. Ver. Sept. 21, '28.

f. Signals and Communication

Power-Line Carrier Telephony.* L. F. Fuller and W. A. Tolson. A. I. E. E. Oct., '28.
Problems in Power-Line Carrier Telephony and Recent Developments to Meet Them.* W. B. Wolfe and J. D. Sarros. A. I. E. E. Oct., '28.
The Communication System of the Conowingo Development. W. B. Beals and E. B. Tuttle. A. I. E. E. Oct., '28.

M. Architecture

a. Educational, Government and Scientific Buildings

Wandlungen im Hörsaalbau.* (Changes in Lecture Hall Construction.) Weissgerber. Z. d. Bauver. Sept. 5, '28.

b. Business and Commercial Buildings

An Example of Modern Building Planning.* W. W. Hay. Oct. 18, '28.

c. Residences, Hotels

Grundrissbildung und Raumgestaltung von Kleinwohnungen und neue Auswertungsmethoden.* (Formation of Plans and Shaping Rooms for Small Dwellings, and New Methods of Estimating.) Alexander Klein. Z. d. Bauver. Serial beginning Aug. 22, '28.

i. Fire Protection

Methods of Reducing Fire Hazards During Construction.* O. J. Swander. Eng. N. R. Oct. 4, '28.

O. Administration. Legislation. Economics. Statistics

b. Economic Questions of a General Character, Valuations, Etc.

Force Account on Unit-Price Construction Contracts. (Philadelphia Bureau of Mun. Research.) Mun. N. & W. W. Sept., '28.

Taxation and Public Improvements. V. Bernard Siems. (Report read before Am. Assoc. Engrs.) Mun. N. & W. W. Sept., '28.

The Influence of Engineering on Civilization. William Ellis. (Paper read before British Assoc.) Eng. Serial beginning Sept. 14, '28, Engr. Sept. 14, '28.

d. Administrative and Financial Management of Means of Communication

1. General Questions

The Control of Municipal Construction Operations.* Arthur W. Consoer. Mun. N. & W. W. Oct., '28.

3. Inland Navigation

The Rivers of the Province of Quebec in their Legal Aspect. J. M. Hector Cimon. Eng. Inst. Can. Oct., '28.

4. Maritime Ports

Delaware River Bridges and the Port of Philadelphia. Engrs. & Eng. Sept., '28.

g. Engineering Education

Education and Training as Applied to the Engineer. F. L. Bishop. Mech. Eng. Sept., '28.

Q. Surveying and Geodesy

A Generalized Method for Transverse Surveys in Open Country. Arthur Henry Douglas. Int. Ry. Cong. Assoc. Sept., '28.

Notes on Railway Survey.* George Wright Norton Rose. Int. Ry. Cong. Assoc. Sept., '28.

R. Landscape Engineering

The Design of a Golf Putting Green.* E. A. Connell. Land Arch. July, '28.

Interior Block Playgrounds in High Class Residential Developments.* S. Herbert Hare. City Plan. Oct., '28.

Der moderne Garten und Park.* (The Modern Garden and Park.) Gustav Allinger. Z. d. Bauver. Serial beginning Sept. 12, '28.

S. City Planning

Regional Planning and Organization. Morris Knowles. Engrs. & Eng. Sept., '28.

Modern Attitude to Town Planning. J. D. Craig. (Paper read before Town Plan. Inst. Can.) Can. Engr. Sept. 25, '28.

Town Planning Situation in Winnipeg. R. H. Avent. (Paper read before Town Plan. Inst. Can.) Can. Engr. Sept. 25, '28.

Imagination in City Planning. Discussion: R. D. N. Simham and M. W. Weir. Am. Soc. C. E. Oct., '28.

The Paris International Housing and Town Planning Congress.* Alfred Bettman. City Plan. Oct., '28.

Housing Industrial Classes in Canada. A. G. Dalzell. (Paper read before Town Plan. Inst. Can.) Can. Engr. Oct. 2, '28.

Regional Engineering, Its Problems, Status and Future Requirements.* W. W. DeBerard. Eng. N. R. Oct. 4, '28.

Von der Schweizerischen Städtebau-Ausstellung Zurich, 4 August bis 2 September 1928.* (The Swiss City-Building Exposition in Zurich, Aug. 4 to Sept. 2, 1928.) Schw. Bauz. Sept. 1, '28.

Employment Service

The Engineering Societies Employment Service is under the joint management of the National Societies of Civil, Mining, Mechanical, and Electrical Engineers. A Chicago office is maintained in co-operation with the Western Society of Engineers, and a San Francisco office, in co-operation with the Engineers' Club of San Francisco and the California Section of the American Chemical Society. The Service is available only to the several memberships and is maintained by contributions from the Societies and their individual members who are directly benefited.

Offices.—Eastern Office, 31 West 39th Street, New York, N. Y., Walter V. Brown, Manager; Chicago Office, 205 West Wacker Drive, 1216 Engineering Building, Chicago, Ill., A. Krauser, Manager; and San Francisco Office, 57 Post Street, Room 715, San Francisco, Calif., Newton D. Cook, Manager.

Men Available.—Under this heading, brief announcements will be published without charge. These announcements will not be repeated, except on request received after an interval of one month. Names and records will remain in the active files of the Service for a period of three months, and are renewable on request. Notices for *Proceedings* should be addressed to Employment Service, 31 West 39th Street, New York, N. Y., and should be received prior to the first of the month.

Opportunities.—A Bulletin of engineering positions available is published weekly and may be obtained by members of the Societies concerned at a subscription rate of $3 per quarter, or $10 per annum, payable in advance. Positions which are not filled promptly as a result of publication in the Bulletin, may be announced herein.

Voluntary Contributions.—Members obtaining positions through the medium of this Service are invited to co-operate with the Societies in the financing of the work by nominal contributions made within thirty days after placement, on the basis of 1½% of yearly salary; temporary positions (of one month or less), 3% of total salary received. The income contributed by the members, together with the finances appropriated by the four Societies named, will be sufficient, it is hoped, not only to maintain but to increase and extend the Service.

Replies to Announcements.—Replies to announcements published herein, or in the Bulletin, should be addressed to the key number indicated in each case, with a two-cent stamp attached for re-forwarding, and forwarded to the Employment Service at the address given. Replies received by the Service after the positions to which they refer have been filled, will not be forwarded.

MEN AVAILABLE

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; graduate civil engineer, Rensselaer Polytechnic Institute; age 35; married. Six years' construction experience, heavy concrete, excavations, sewers, pavements, and State highways. Structural steel shop, field, and mechanical equipment. Four years sales engineering service and steel. Location, Metropolitan District. A–248.

SPECIFICATION WRITER, M. Am. Soc. C. E.; age 58. Thirty years' experience in specification writing, supplemented by handling work in charge. Buildings, bridges, paving, sewers, and railroads. Minimum salary, $250 per month. South preferred. Can handle drafting-room or a residency. Available at once. A–1602.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E. Twenty-five years' experience in drafting, land and topographic surveying, railroad, drainage, irrigation, sewerage, and water supply engineering. Employed, desires change. A–5125.

CIVIL ENGINEER, M. Am. Soc. C. E.; single; about 15 years on water supply construction, maintenance, and operation; also hydro-electric construction, preferring water from the dam up; also about 15 years' experience along the lines of City Engineer with highway and railroad location, construction, and maintenance. Speaks Spanish. Will go to Latin America or the Far East. A–5380.

EXECUTIVE ENGINEER, Assoc. M. Am. Soc. C. E.; age 41; married. Ten years full charge municipal work. Five years, Latin America, harbor improvements, railroads, road, and buildings by direct administration. Good organizer, with business experience. Speaks good Spanish. Prefers industrial management, Latin America. B–955.

STRUCTURAL ENGINEER, Assoc. M. Am. Soc. C. E.; M. I. T. graduate (M. S. in C. E.); age 33; married. Ten years' experience, designing, estimating, and constructing concrete and steel structures of all types. Perfect knowledge of Russian and French. American citizen. Desires responsible executive position requiring technical ability and experience. Location, New York City or Europe. B–1168.

CIVIL ENGINEER, M. Am. Soc. C. E.; native born; single; speaks, reads and writes French; broad and varied experience, office and field, over 35 years in the United States, France, and West Indies; locating, designing, constructing railroad, bridge, building, industrial, metallurgical plant, power station, and public utility works; original research, reports, appraisals. Technical, editorial writing. B–4594.

CONSTRUCTION AND OPERATING ENGINEER, M. Am. Soc. C. E.; graduate mechanical engineer; age 41. Twenty years' experience, last fifteen in charge, construction, operation departments, large companies, United States, South America, Latin-America, including hydro-electric, steam plant developments, transmission lines, copper smelter, aerial tramway, water supply systems, etc. Organizer, hustler. Willing to go anywhere. B–4985.

ENGINEER, Assoc. M. Am. Soc. C. E.; B. S. E. (C. E.); age 34; married. Seeking opening in engineering, scientific field, or possibly sales. Experience in Army, public health engineering, municipal research, selling and promotion, involving State highway departments, cities, railways, industrials. Investigation and report work. Thorough, accurate, high standards of accomplishment, gets along with all types of men. B–5254.

ENGINEER, EXECUTIVE, M. Am. Soc. C. E.; graduate civil engineer with degrees; age 39. Broad experience in structural and industrial work, including allied mechanical lines. B–6046.

CIVIL ENGINEER, M. Am. Soc. C. E.; twenty-five years' experience on hydro-electric, irrigation, and highway work, and in exploration. Intimately acquainted with conditions in Central America and the West Indies. Prepared to make investigations and reports or superintend construction or operation of Latin-American projects. B–7788.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; Rensselaer Polytechnic Inst., 1924; age 25. Three years in charge of steel bridge and concrete work for a Western railroad. Capable of directing work and handling men. Would like position with a firm of engineers and contractors or with a consulting engineer. Future advancement main consideration. C–335.

CONSTRUCTION EXECUTIVE, SUPERINTENDENT, OR ENGINEER, Assoc. M. Am. Soc. C. E. Graduate Civil Engineer, Sheffield Scientific School, Yale Univ.; age 48; married. Twenty years, full charge, construction, railroad, plain and reinforced concrete, bridge, highway, and all kinds of municipal work, sewerage systems, foundations, industrial and commercial buildings. Can use Spanish. C–675.

PUBLIC UTILITY, Jun. Am. Soc. C. E.; civil engineering graduate, Mass. Inst. Tech. Four years, hydro-electric experience. Would like work with operating company. Location, South preferred. C–1653.

CIVIL ENGINEER, M. Am. Soc. C. E.; age 28; married; formerly, general officer, large railroad system, experienced in railroad and highway location, construction, and maintenance and structures incident thereto. Location preferred, Texas. C–2263.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; University graduate; age 29. Five years' varied structural experience in connection with railroad maintenance and construction, subway and building construction, on design, construction, and field surveys. Desires position in engineering construction, preferably with construction company, building contractor, or consulting engineer. Now employed, will arrange for interview. C–2605.

CHIEF ENGINEER OR EXECUTIVE, Assoc. M. Am. Soc. C. E.; age 40; married. Registered civil engineer, reciprocal license. Twenty-two years' experience, mine, railroad, municipal, development; thoroughly familiar with mechanical and electrical equipment. Ten years, chief engineer; two years, consulting. Prefers responsibility in broad field. Location, immaterial. C–4276.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; Norwich University graduate; age 25; married. Three years' general engineering experience with Class "A" railroad and with professional engineer in real estate developments. At present employed. Desires permanent position with sewerage, architectural, industrial, or water-works concern. Willing to start at bottom. Prefers New England location. References. C–4838.

CIVIL AND SANITARY ENGINEER, Assoc. M. Am. Soc. C. E. University graduate; age 43. Twenty years' professional experience covering water supply, sewage disposal, paving, railroads, highways, building design and construction. Seven years in Central and South America, in-

cluding four years on Panama Canal during construction period. Served as Colonel during World War. C–4866.

GRADUATE CIVIL ENGINEER, Jun. Am. Soc. C. E.; age 23; single; with experience in field construction of structural steel and concrete bridges, desires designing or construction position on bridge or dam project. Will consider sales position. C–4876.

ARCHITECT AND ENGINEER, M. Am. Soc. C. E.; with technical education and large experience, fully capable of taking entire charge or doing any part of the work, wants position in or near Boston and prefers outside superintendence. Is familiar with the design, uses, and equipment of buildings, also the materials and methods of construction, heating, lighting, etc. C–4918.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E. Twenty-seven years' experience. Seven years, designing, estimating, investigations, reports; twenty years in field as general superintendent and construction superintendent on general construction; especially excavation, bridge and building foundations, wooden and reinforced concrete piers, wharves, terminal developments and buildings, floating dry docks. Location, United States or West Indies. C–4954.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; B. S. and C. E. degrees; Licensed Structural Engineer, New Jersey. One year, highway, survey, construction. Four years, railroad, design of steel, concrete structures of all types. Inspections and investigation of existing structures. Location preferred, New York City, New Jersey, or Philadelphia, Pa. Construction company or consulting engineer preferred. Only permanent position desired. C–5048.

GRADUATE CIVIL ENGINEER; seven years' experience, field, office, and as resident on construction; also knowledge of the fundamentals of accounting and has read a little law. Visions of locating on a permanent basis with some manufacturer or corporation that can offer future possibilities. C–5100.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; graduate, 1927; age 23. Structural steel estimator and inspector; instrumentman, chief of party, highway and bridge survey. Desires engineering or construction work with an engineering company or contractor. Location preferred, Southeastern States. C–5144.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; graduate 1926; experienced in triangulation, topographic, hydrographic and location surveys, and as chief of party; familiar with cost accounting and with dredging methods. Desires work with construction company on hydro-electric, irrigation, drainage work, but would consider any offer. C–5191.

CONSTRUCTION ENGINEER OR RESIDENT ENGINEER, Assoc. M. Am. Soc. C. E.; technical graduate. Seventeen years' experience in construction. All types of construction work, both as engineer and superintendent. Honest, capable, a self-starter. Territory desired, Metropolitan Area. Type of work desired, streets, roads, sewers, water-works, industrial and public buildings. At present, Construction Engineer for Engineering Corporation. C–5220.

CHIEF ENGINEER, M. Am. Soc. C. E.; college degrees; age 48; married. Design and construction of storage dams, canal systems, tunnels, pumping plants. Experience includes preliminary studies, organization, and project management. Desires connection with hydro-electric, irrigation, or other project of similar nature. Present work will soon be completed. Excellent health. C–5225–8–A–26. San Francisco.

Membership

(From October 3 to November 6, 1928)

Additions

		Date of Membership.
HONORARY MEMBERS		
SMITH, Jonas Waldo. Cons. Engr., Board of Water Supply City of New York, 2224 Municipal Bldg., New York, N. Y.	Assoc. M. M. Hon. M.	Oct. 5, 1892 April 5, 1899 Oct. 1, 1928
MEMBERS		
ADAMS, Charles Melvin. Municipal Engr., Public Works, Dominican Govt., Santo Domingo, Dominican Republic	M.	Aug. 27, 1928
ALLEN, Herschel Heathcote. Cons. Engr. (The J. E. Greiner Co.), 1308 Lexington Bldg., Baltimore, Md.	Jun. Assoc. M. M.	Nov. 3, 1915 Nov. 9, 1920 Oct. 1, 1928
ALTHOUSE, Raymond Richard. 793 Lyons Ave., Irvington, N. J.	Jun.	Oct. 1, 1928
ALTMANN, Paul Frederick August. Superv. of Constr., New York Telephone Co. (Res., 1748 Garfield St.), New York, N. Y.	Jun.	June 4, 1928
AMBROSE, Raymond Gordon. Conway, S. C.	Jun.	Oct. 1, 1928
ANDERSON, John David. With United Engrs. & Constructors, Inc., 112 North Broad St., Philadelphia (Res., 513 South Narberth Ave., Merion), Pa.	Assoc. M. M.	Jan. 16, 1922 Oct. 1, 1928
ARCHAMBAULT, Joseph Ubald. Care, North Shore Power Co., St. Maurice St., Three Rivers, Que., Canada	Jun.	Oct. 1, 1928
ARTHUR, Francis William. 1204 Alhambra Ave., Martinez, Calif.	Jun.	Oct. 1, 1928
ARTHUR, Lynn Jennings. Civ. Engr., Charles Brossman (Res., 1444 Congress Ave.), Indianapolis, Ind.	Jun.	July 16, 1928
ARTHUR, Urie Nelson. Chf. Engr., Dept. of City Planning, City of Pittsburgh, 919 City-County Bldg., Pittsburgh, Pa.	M.	Oct. 1, 1928
BAKER, John Ford. With Brookes Baker, 212 Ellison Bldg., Fort Worth, Tex.	Jun.	Oct. 1, 1928
BANTA, Edwin Smedley. 4928 Chestnut St., Philadelphia, Pa.	Jun.	Oct. 1, 1928
BAXTER, Ellery Read. Junior Engr., Eng. Dept., Shell Co. of California (Res., 1726 East 4th St.), Long Beach, Calif.	Jun.	Oct. 1, 1928
BECKWITH, Charles Seward. 215 Cleveland Ave., Michigan City, Ind.	Jun.	Oct. 1, 1928
BEER, Frederick Max. Cons. Engr., 215 Montague St., Brooklyn (Res., 107-30 One hundred and twenty-fifth St., Richmond Hill), N. Y.	Assoc. M. M.	June 16, 1919 Oct. 1, 1928
BEER, Robert Gardiner. 3841 Eighteenth Ave., Brooklyn, N. Y.	Jun.	Oct. 1, 1928
BELL, Edward Arthur. Asst. Engr., Clyde Potts, New York (Res., 131 Wheeler Ave., Mineola), N. Y.	Jun.	Oct. 1, 1928
BERNSTEIN, Louis Stewart. Engr. in Chg. of Designing, The Niagara Falls Power Co. (Res., 537 Eleventh St.), Niagara Falls, N. Y.	M.	Oct. 1, 1928
BERRY, Ralph Whitely. Topographic and Geodetic Engr., U. S. Geological Survey, Washington, D. C. (Res., 7005 Meadow Lane, Chevy Chase, Md.)	M.	Oct. 1, 1928
BILLION, Charles Edward. 824 Avery Ave., Syracuse, N. Y.	Jun.	Oct. 1, 1928
BITNER, Melville Sperry. 710 Fourth Ave., Joliet, Ill.	Jun.	Oct. 1, 1928
BLACKALLER, James Harrison. Box 696, Seymour, Tex.	Jun.	Oct. 1, 1928
BLAIR, Paul McCreary. Care, Bermuda Ry. Co., Ltd., Hamilton, Bermuda	Jun.	Oct. 1, 1928
BORNTRAGER, Robert Allen. Central Y. M. C. A., Du Bois, Pa.	Jun.	Oct. 1, 1928
BRIAN, Lawrence Gordon. 37 Virginia Ave., Poughkeepsie, N. Y.	Jun.	Oct. 1, 1928
BROOME, Ernest Lawrence. Cons. Engr., Philips & Davies, Inc., Grand Central Terminal, New York (Res., 120 South Broadway, Tarrytown), N. Y.	M.	Oct. 1, 1928
BROWN, Herbert Henry. Engr. in Chg. of Design and Constr. of Pumping Stations, City of Milwaukee (Res., 1205 Thirty-sixth St.), Milwaukee, Wis.	Assoc. M.	Oct. 1, 1928
BROWN, Jonathan Burdette. Extension Specialist in Irrig. Agri. Extension Service, Univ. of California, Berkeley (Res., 1531 Thirty-eighth St., Sacramento), Calif.	Assoc. M. M.	Sept. 12, 1921 Oct. 1, 1928
BROWN, Julian Clifford. 233 Fourth Ave., Phoenixville, Pa.	Jun.	Oct. 1, 1928
BUCHTENKIRCH, William. Engr. and Contr. (Res., 21 Claremont Ave.), New York, N. Y.	Assoc. M.	July 16, 1928
BUCK, George Herman. Associate Engr., Nicholas S. Hill, Jr., 112 East 19th St., New York, N. Y. (Res., 260 West Jersey St., Elizabeth, N. J.)	Jun. Assoc. M. M.	Oct. 14, 1919 Aug. 4, 1924 Oct. 1, 1928
BUCK, Walter Van. State Highway Engr., State Highway Comm., State House (Res., 2219 Huntoon St.), Topeka, Kans.	Jun. Assoc. M. M.	July 9, 1912 Nov. 28, 1916 Oct. 1, 1928
BUDGEN, Harry Percy. Chf. Technical Adviser, The Cleveland Bridge & Eng. Co., Ltd., Darlington, Durham, England.	Assoc. M.	Aug. 27, 1928
CAGNANI, Joseph Lloyd. Asst. to Chf. Engr., Harris Structural Steel Co., 1440 Broadway (Res., 1108 East 179th St.), New York.	Jun.	Oct. 1, 1928
CALVIN, Heath Paul. 424 North 4th St., Niles, Mich.	Jun.	Oct. 1, 1928

MEMBERS—(*Continued*)

		Date of Membership.
CAMPBELL, James Kenneth. Cons. Engr. (Eadie, Freund & Campbell), 110 West 40th St., New York, N. Y.	Assoc. M.	June 1, 1920
	M.	Oct. 1, 1928
CASTELAZO, Arthur Harrold. Draftsman, California Water Service Co., San Francisco (Res., 2634 Channing Way, Berkeley), Calif.	Jun.	Oct. 1, 1928
CHAMBERLIN, Stephen Johnes. 317a North 11th St., East St. Louis, Ill.	Jun.	Oct. 1, 1928
CHENOWETH, Will Roy. Associate Topographical Engr., U. S. Geological Survey, Greenwood, Mich.	Assoc. M.	Oct. 1, 1928
CHRISTENSEN, John Christian Valdemar. Structural Engr., The Cincinnati Union Terminal Co., 1020 Temple Bar Bldg., Cincinnati, Ohio.	M.	Oct. 1, 1928
CHRISTIANSEN, Jerald Emmett. University Farm, Irrig. Div., Davis, Calif.	Jun.	Oct. 1, 1928
CICCOLILLI, Peter Robert. 197 Carlton Ave., Brooklyn, N. Y.	Jun.	Oct. 1, 1928
CLARK, Roy James. Asst. to City Engr. (Res., 315 Leonard St.), Oneida, N. Y.	Jun.	Oct. 1, 1928
CLASS, Charles Frank, Jr. 4028 Walnut St., Philadelphia, Pa.	Jun.	Oct. 1, 1928
CLAUSNITZER, John. Chf. Engr., William Kennedy Const. Co., 215 Montague St., Brooklyn, N. Y.	Jun.	Mar. 3, 1903
	Assoc. M.	April 18, 1916
	M.	Oct. 1, 1928
COBB, Guy Williams. City Engr., Am. Trust Bldg., Jonesboro, Ark.	Assoc. M.	Oct. 1, 1928
COLLINS, William Leighton. 3359 Warren Ave., Apartment 3, Chicago, Ill.	Jun.	Oct. 1, 1928
CONNOLLY, Donald Hilary. Maj., Corps of Engrs. U. S. A., Army War Coll., Washington, D. C.	Jun.	April 7, 1915
	Assoc. M.	Oct. 8, 1918
	M.	Oct. 1, 1928
COOK, Holton. Civ. Engr., 524 Twelfth St., Huntington, W. Va.	Jun.	Aug. 31, 1915
	Assoc. M.	Oct. 10, 1921
	M.	Oct. 1, 1928
COTTON, Linwood Sumner. 36 Morton St., Cumberland Mills, Me.	Jun.	Oct. 1, 1928
COURTER, John Wayne. Technology Dormitory, Cambridge, Mass.	Jun.	Oct. 1, 1928
CRENSHAW, Bernard Lee. Engr. and Contr. (Crenshaw & McIver), (Res., 56 Park Lane, N. E.), Atlanta, Ga.	Assoc. M.	May 13, 1918
	M.	Oct. 1, 1928
CRISTOFALO, Charles Steven John. 1016 Hickory St., Waukegan, Ill.	Jun.	Oct. 1, 1928
DANIELS, Marcell Deets. 417 North Madison, Peoria, Ill.	Jun.	Oct. 1, 1928
DAVIDSON, Roscoe Alexander. R. D. 1, Wattsburg, Pa.	Jun.	Oct. 1, 1928
DAVIS, Edward Thomas. Computer and Designer, The J. N. Chester Engrs., Pittsburgh (Res., 701 East Railroad Ave., Verona), Pa.	Assoc. M.	Oct. 1, 1928
DAVIS, Harmer Elmer. 2531 Channing Way, Berkeley, Calif.	Jun.	Oct. 1, 1928
DE FOREST, George Parmenter. 17 Myrtle Ave., Troy, N. Y.	Jun.	Oct. 1, 1928
DICKE, Edward Christian. Engr. and Secy., Fruin-Colnon Contr. Co., 502 Merchants-Laclede Bldg., St. Louis, Mo.	Jun.	May 3, 1904
	Assoc. M.	April 6, 1909
	M.	Oct. 1, 1928
DILLOUGHERY, Austin Paul. Structural Detailer, Post & McCord, 101 Park Ave. (Res., 309 East 85th St.), New York, N. Y.	Jun.	Oct. 1, 1928
DOLAN, Samuel Michael Patrick. Asst. Prof., Oregon State Coll. (Res., 409 North 25th St.), Corvallis, Ore.	Assoc. M.	June 4, 1928
DOYEN, George Evelyn. With Am. Inst. of Steel Contrs., Inc., 871 Paul Brown Bldg., St. Louis (Res., 504 South Gore Ave., Webster Groves), Mo.	Assoc. M.	July 2, 1913
	M.	Oct. 1, 1928
DRAKE, Chester Francis. Div. Supt., Filtration Div., Bureau of Water, Pittsburgh (Res., 226 Delafield Ave., Aspinwall), Pa.	M.	Oct. 1, 1928
DRUDING, Henry Anthony. 114 Glencoe Rd., Upper Darby, Pa.	Jun.	Oct. 1, 1928
DUNCAN, Arthur Gibson. Head, Eng. Dept., Union Appraisal Co., Los Angeles (Res., 549 West Dryden St., Glendale), Calif.	Jun.	May 19, 1924
	Assoc. M.	Oct. 1, 1928
EBERZ, Fred Ludwig. 2445 North 29th St., Philadelphia, Pa.	Jun.	Oct. 1, 1928
ECKER, John Beard. Jarvis Field House, 13 A Chauncy St., Cambridge, Mass.	Jun.	Oct. 1, 1928
EISENLOHR, William Stewart, Jr. 2500 Custom House Bldg., Boston, Mass.	Jun.	Oct. 1, 1928
FELIX, Henry Stewart. 220 South Newport Ave., Detroit, Mich.	Jun.	Oct. 1, 1928
FERGUSON, Randon. Asst. Engr. on Investigation of Stresses in R. R. Track, 301 Laboratory of Applied Mechanics, Univ. of Illinois, Urbana, Ill.	Assoc. M.	Oct. 1, 1928
FIETSAM, Raymond Kuhn. With W. A. Fuller Co., 1912 Railway Exchange Bldg. (Res., 3660 Juniata St.), St. Louis, Mo.	Jun.	Oct. 1, 1928
FINCH, James Kip. Prof., Civ. Eng., Columbia Univ., (Res., 39 Claremont Ave.), New York, N. Y.	Jun.	June 4, 1907
	Assoc. M.	Nov. 3, 1915
	M.	Oct. 1, 1928
FLICKINGER, Lloyd Henry. Junior Engr., The San. Dist. of Chicago, 910 South Michigan Ave., Chicago (Res., 711 Wisconsin Ave., Oak Park), Ill.	Jun.	Oct. 1, 1928
FORESTER, Don Montell. Associate Engr. with W. B. Montgomery & Associates, Box 155, Jackson, Miss.	Assoc. M.	Mar. 15, 1926
	M.	Oct. 1, 1928
FRAZIER, Irvin Pope. Care, U. S. Geological Survey, Hardinsburg, Ky.	Jun.	Oct. 1, 1928

MEMBERS—(*Continued*)		Date of Membership.	
FREEMAN, Perry John. Chf. Engr., Bureau of Tests and Specifications, Allegheny Dept. of Public Works (Res., 3219 Latonia Ave., Dormont), Pittsburgh, Pa.	M.	Oct.	1, 1928
GARDNER, Evan Harris. 822 Pennsylvania Ave., Bethlehem, Pa.	Jun.	Oct.	1, 1928
GARDNER, Junius Raymond. Asst. Engr., Taylor & Woltman, Bloomington (Res., 506 Dry Grove St., Normal), Ill.	Assoc. M.	Oct.	1, 1928
GAUCHER, Leon Philip. 1230 Proctor St., Port Arthur, Tex.	Jun.	Oct.	1, 1928
GAUSSA, Gerard Majella. Topographical Draftsman, Board of Transportation, City of New York (Res., 945 Sherman Ave.), New York, N. Y.	Jun.	Oct.	1, 1928
GOLDSCHLAG, Oscar. Cons. Engr., 1482 Broadway, New York, N. Y.	Assoc. M.	Aug.	27, 1928
GROVER, Newell Arthur. 2232 Ivy Drive, Oakland, Calif.	Jun.	Oct.	1, 1928
HALL, Wilfred McGregor. Engr. and Mgr., Hydro-Electric Development, The U. G. I. Contr. Co., Philadelphia, Pa.	Assoc. M. M.	June Oct.	16, 1924 1, 1928
HAMMOND, Wilson Thomas. 107 Halsey St., Newark, N. J.	Jun.	Oct.	1, 1928
HANSON, Loring Outhier. Junior Engr., Bureau of Public Roads, U. S. Dept. of Agriculture (Res., 1723 Fifth Ave.), Fort Worth, Tex.	Jun.	Oct.	1, 1928
HARLESS, Charles Malcolm. 200 Stratford, Houston, Tex.	Jun.	Oct.	1, 1928
HARNDEN, Harvey Adelbert. 410 North Cuyler Ave., Oak Park, Ill.	Jun.	Oct.	1, 1928
HARNED, Warren Phillips. 57 Green St., Woodbridge, N. J.	Jun.	Oct.	1, 1928
HATCHER, Melvin Pross. With Burns & McDonnell Eng. Co., 402 Interstate Bldg., Kansas City, Mo.	Assoc. M. M.	Nov. Oct.	26, 1923 1, 1928
HAUPT, Edward. Pres., Strobel Steel Constr. Co., 1744 Monadnock Blk., Chicago, Ill.	Affiliate M.	Jan. Oct.	31, 1911 1, 1928
HAYDEN, Beauford Emmett. Reclamation Economist, Bureau of Reclamation, Denver, Colo.	Assoc. M. M.	Dec. Oct.	6, 1915 1, 1928
HEARD, William Lee. Bolivar, Tenn.	Jun.	Oct.	1, 1928
HEIDENREICH, Edwin Lee, Jr. Chf. Engr., New York Trap Rock Corporation, 252 Water St., Newburgh, N. Y.	Assoc. M.	Aug.	27, 1928
HETZLER, Paul George. 1022 Fourth Ave., Beaver Falls, Pa.	Jun.	Oct.	1, 1928
HIDALGO, Rafael Alberto. Care, George C. Bunker, Box 5035, Ancon, Canal Zone.	Jun.	Oct.	1, 1928
HILLIARD, Arthur Eugene. Junior Engr., Board of Transportation, 139 Dyckman St. (Res., 100 Post Ave.), New York, N. Y.	Jun. Assoc. M.	May Oct.	28, 1923 1, 1928
HILLS, George Burkhart. Engr. (George B. Hills Co.), 316 Liggett Bldg., Jacksonville, Fla.	Assoc. M. M.	April Oct.	19, 1920 1, 1928
HOMMON, Charles Curtis. Gen. Supt., Municipal Sewerage Treatment Plant (Res., 1403 Logan Ave., N. W.), Canton, Ohio.	Assoc. M.	Oct.	1, 1928
HOWE, Henry Lawrence. City Engr.; Deputy Commr. of Public Works; Chf. Engr., City Planning Comm., 52 City Hall, Rochester, N. Y.	M.	Oct.	1, 1928
HOWE, Homer Asa. Structural Engr., Frank W. Ball Co., Hanna Bldg. (Res., 1932 East 97th St., Apartment 323), Cleveland, Ohio.	Assoc. M.	Oct.	1, 1928
HUBBELL, Howard Adams. Engr., Civ. and Hydr. Dept., Commonwealth Power Corporation, Jackson, Mich.	Assoc. M.	Oct.	1, 1928
HUBER, Charles Russell. Instr., Eng. Drawing and Surveying, Ripon Coll. (Res., 415 Watson St.), Ripon, Wis.	Jun.	Oct.	1, 1928
HUMMEL, David Martin. 42 Smith St., Seymour, Conn.	Jun.	Oct.	1, 1928
INGS, Jasper Harold. Engr., Gatineau Power Co., 38 Monk St., Ottawa, Ont., Canada	Jun.	Oct.	1, 1928
JACKSON, Eugene Kerfoot. Asst. on Eng. Corps, P. R. R. (Res., 1126 Chapline St.), Wheeling, W. Va.	Jun.	Oct.	1, 1928
JACQUET, Alphonse. Asst. Engr., Coverdale & Colpitts, New York, N. Y. (Res., 130 Madison St., Woodridge, N. J.)	Jun.	Oct.	1, 1928
JENKS, Harry Neville. Associate Prof., San. Eng., Dept. of Civ. Eng., and San. Engr., Eng. Experiment Station, Iowa State Coll., Ames, Iowa	Jun. Assoc. M. M.	May Nov. Oct.	15, 1917 9, 1920 1, 1928
JEWELL, Robert Burnett. 357 Ninth St., Brooklyn, N. Y.	Jun.	Oct.	1, 1928
JOHNSON, Lewis Hamilton. 238 Park Ave., Huntington, N. Y.	Assoc. M.	Oct.	1, 1928
JOHNSON, Oliver Bertrand. Care, U. S. Geological Survey, Fort Smith, Ark.	Jun.	June	4, 1928
JOSEPHS, Arthur Cook. 420 Memorial Drive, Cambridge, Mass.	Jun.	Oct.	1, 1928
KARSTETTER, John Jacob. Asst. Engr., Water Bureau, City of Portland, Bullrun, Ore.	Assoc. M.	April	23, 1928
KAUFFMAN, Charles Crouch. (O. F. Kauffman & Son), 1730 Candler Bldg., Atlanta, Ga.	Jun.	Oct.	1, 1928
KELLERMANN, William Francis. Asst. Engr., U. S. Bureau of Public Roads (Res., 3021 Channing St., N. E.), Washington D. C.	Jun.	Oct.	1, 1928
KERR, Horace Scott. Res. Engr., State Highway Dept., Box 696, Seymour, Tex.	Assoc. M.	Oct.	1, 1928
KETCHUM, Addison Raymond. 180 Glasgow St., Clyde, N. Y.	Jun.	Oct.	1, 1928
KIDDER, Harold Halsey. Engr., Irrig. and Drainage, Hidalgo County Water Impvt. Dist. No. 2, San Juan, Tex.	Assoc. M.	Oct.	1, 1928

MEMBERS—(*Continued*)

		Date of Membership.
KILIAN, Theodore Philip. Chf. Draftsman, New York and New Jersey Bridge & Tunnel Comm., Care, Holland Tunnel, Corner, Canal and Varick Sts., New York, N. Y.	Assoc. M.	Oct. 1, 1928
KINSEL, Harry Lyman. 518 Fifth Ave., Altoona, Pa.	Jun.	Oct. 1, 1928
KLEGERMAN, Morris Herman. 32 Holden St., Lowell, Mass.	Jun.	Oct. 1, 1928
KOCH, Walter Kurt. Draftsman, Westchester County Park Comm., Pleasantville, N. Y.	Jun.	June 4, 1928
KOENIG, Edward Francis. Junior Civ. Engr. with City Engr. (Res., 621 East 25th St.), Los Angeles, Calif.	Jun.	April 23, 1928
LANDSIEDEL, William. Structural Designer, Sewerage Comm., City of Milwaukee, 508 Market St., Milwaukee, Wis.	Assoc. M.	Oct. 1, 1928
LAWRENCE, John Howell. Supt. of Bridge Constr., U. S. Forest Service, Ferry Bldg., San Francisco, Calif.	Assoc. M.	April 23, 1928
LEBARON, Rolla Parker. 1008 Walnut, Pittsburgh (21), Pa.	Jun.	Oct. 1, 1928
LEDEBOER, Frederic William Cornelius. Draftsman, Eng. Dept., Sheel Co. of California, Los Angeles (Res., 5546 Bayer St., Hollywood), Calif.	Jun.	Oct. 1, 1928
LEERMAKERS, Henry Anthony. 415 Ross Ave., Wilkinsburg, Pa.	Jun.	Oct. 1, 1928
LESUEUR, Benjamin Wilmar. 1532 Park Ave., Baltimore, Md.	Jun.	July 16, 1928
LI, Wen-Pang. Box 1637, Stanford Univ., Palo Alto, Calif.	Jun.	Oct. 1, 1928
LIDICKER, William Zander. 740 North Cambridge Ave., Milwaukee, Wis.	Jun.	Oct. 1, 1928
LINDEMAN, Marvel Fred. 109 East Springfield Ave., Champaign, Ill.	Jun.	Oct. 1, 1928
LOVELL, Charles William. Dist. Engr., State Highway Dept., 1608 Heyburn Bldg., Louisville, Ky.	Assoc. M. M.	Nov. 21, 1921 Oct. 1, 1928
LUNDQUIST, Eugene Edward. With Am. Bridge Co. (Res., 225 Taney St.), Gary, Ind.	Jun.	Oct. 1, 1928
MACA, Leon Francis. 506 Linden Ave., Crete, Nebr.	Jun.	Oct. 1, 1928
MACY, Frederick Oliver. 1870 Sacramento St., San Francisco Calif.	Jun.	Oct. 1, 1928
McCONOCHIE, William Robert. 1611 Twelfth Ave., Rock Island, Ill.	Jun.	Oct. 1, 1928
McCORD, Herbert Weymouth. Insp. and Draftsman, Post & McCord, 101 Park Ave., New York, N. Y.	Jun.	Oct. 1, 1928
McKEAGUE, Edward Daniel. 9232 Woodlawn Ave., Chicago, Ill.	Jun.	Oct. 1, 1928
McKESSON, Claude Leon. Mgr., Bitumuls Corporation, 503 Market St., San Francisco (Res., 6351 Florio St., Oakland), Calif.	Assoc. M. M.	Mar. 9, 1920 Oct. 1, 1928
McMANUS, John Herbert. Chf., Bureau of Claims, Board of Water Supply, New York (Res., 82 Johnston Ave., Kingston), N. Y.	M.	Oct. 1, 1928
McMURRAY, Donald Irvine. 702 Second Ave., Aberdeen, Wash.	Jun.	Oct. 1, 1928
McNEE, Thomas Lee. 6123 Kingsessing Ave., Philadelphia, Pa.	Jun.	Oct. 1, 1928
MAFFITT, James Strawbridge, 3d. Care, Sanderson & Porter, 105 West Monroe St., Chicago, Ill.	Jun.	Aug. 27, 1928
MANGURIAN, George Nishan. 52 Melrose St., Arlington, Mass.	Jun.	Oct. 1, 1928
MANNEROW, Carl Edward. Asst. Engr., Village of Clawson, Clawson, Mich.	Jun.	Oct. 1, 1928
MARCHBANK, James Hugh. 927 West 19th St., Oklahoma City, Okla.	Jun.	Oct. 1, 1928
MARNET, Hermann. Draftsman, The Cleveland Union Terminals Co., 1010 Terminal Tower Bldg. (Res., 10317 Clifton Boulevard), Cleveland, Ohio.	Jun.	Oct. 1, 1928
MASSEY, James Stuart. Deck Officer, U. S. Coast and Geodetic Survey, Washington, D. C.	Jun.	Oct. 1, 1928
MASSMAN, Henry Joseph, Jr. With Massman Constr. Co., 1222 West 62d St., Kansas City, Mo.	Jun.	Oct. 1, 1928
MEIKLE, Roy Vance. Chf. Engr., Turlock and Modesto Irrig. Dists., Turlock, Calif.	M.	Oct. 1, 1928
MERRITT, Will Dockery. 140 West Gilman St., Madison, Wis.	Jun.	Oct. 1, 1928
MESERVE, Frank Pierce, Jr. Junior Draftsman, Los Angeles County Road Dept., 1106 Hall of Records (Res., 3410 South Gramercy Pl.), Los Angeles, Calif.	Jun.	Oct. 1, 1928
MEYER, Cornelius Robert Henry. 60 North Grove St., Freeport, N. Y.	Jun.	Oct. 1, 1928
MITCHELL, Sidney Jay. Box 245, Pampa, Tex.	Jun.	Oct. 1, 1928
MOCKMORE, Charles Arthur. Instr., Civ. Eng., Oregon State Agri. Coll. (Res., 962 Van Buren St.), Corvallis, Ore.	Assoc. M.	July 16, 1928
MOORE, Charles Herbert. Draftsman, Pearse, Greeley & Hansen, 6 North Michigan Ave., Chicago, Ill.	Jun.	Oct. 1, 1928
MOORE, Lewis Blaffer. Res. Engr. Acueducto Municipal, Cali, Colombia	Assoc. M.	Aug. 27, 1928
MORELAND, Edward Leyburn. Cons. Engr. (Jackson & Moreland), 31 St. James Ave., Boston, Mass.	M.	Oct. 1, 1928
MORTON, Carroll Tracy. Engr., Healy-Tibbitts Constr. Co., 64 Pine St., San Francisco (Res., 3142 Maxwell Ave., Oakland), Calif.	Assoc. M.	Aug. 27, 1928
NOBLE, Harold Aker. Engr., Byllesby Eng. & Management Corporation, Care, San Diego Consolidated Gas & Elec. Co. (Res., 1845 Granada Ave.) San Diego, Calif.	Jun. Assoc. M.	May 19, 1924 Oct. 1, 1928
NORSWORTHY, Leonard Drake. U. S. Asst. Engr., Office, Chf. of Engrs. (Res., 1731 Kilbourne Pl., N. W.), Washington, D. C.	Assoc. M. M.	June 3, 1915 Oct. 1, 1928

MEMBERS—(*Continued*)

	Date of Membership.
NORTON, Robert Arthur. Asst. Drainage Engr., U. S. Dept. of Agriculture, Washington, D. C. (Res., 302 West Illinois St., Urbana, Ill.)	Jun. Oct. 1, 1928
OGILVIE, Noel John. Director, Geodetic Survey of Canada, Dept. of The Interior (Res., 96 Carling Ave.) Ottawa, Ont., Canada	M. Oct. 1, 1928
OWEN, Samuel Patterson. 48 Manchester Pl., Newark, N. J.	Jun. Oct. 1, 1928
PAINTER, Robert James. 57 Second St., Troy, N. Y.	Jun. Oct. 1, 1928
PARKER, Charles Fulton, Jr. Mallison St., South Windham, Me.	Jun. Oct. 1, 1928
PARKER, John Stanley. 1135 Fifty-eighth Ave., Oakland, Calif.	Jun. Oct. 1, 1928
PARKER, Philip Morgan. Care, Parklap Constr. Corporation, 217 Woodward Ave., Detroit, Mich.	Assoc. M. Oct. 1, 1928
PARKIN, George Thomas. Care, State Highway Dept., East Point, Ga.	Jun. Oct. 1, 1928
PARSONS, Norman Chapel. 62 North Carll Ave., Babylon, N. Y.	Jun. Oct. 1, 1928
PENDLETON, Thomas Percy. Topographic Engr., Brock & Weymouth, Inc., 1607 Walnut St., Philadelphia, Pa.	Assoc. M. Nov. 26, 1918 M. Oct. 1, 1928
PETROFESI, Michael Francis. 36 Oak St., New York, N. Y.	Jun. Oct. 1, 1928
PFAEHLER, Richard. Design and Cons. Eng., Southern Power Co. and Allied Interests, Care, Duke Power Co., Charlotte, N. C.	M. Oct. 1, 1928
PHELAN, Seymour Husted. 965 Kingston Ave., Piedmont, Calif.	Assoc. M. Oct. 1, 1928
PLATT, Boyne Hutchinson. Asst. Office Engr., Consoer, Older & Quinlan, 205 West Wacker Drive, Chicago (Res., Deerfield), Ill.	Assoc. M. Oct. 1, 1928
PLUMMER, Harry Custer. Pres. and Treas., The Sterling Eng. Co., 7016 Euclid Ave., Cleveland, Ohio.	Assoc. M. Oct. 1, 1928
POOLE, William Clayton. 2741 Proctor St., Port Arthur, Tex.	Jun. Oct. 1, 1928
PREST, Kenneth Wallace. 1005 Grand Central Ave., Tampa, Fla.	Jun. Oct. 1, 1928
REEDER, William Symns. 259 St. Paul St., Brookline, Mass.	Jun. Oct. 1, 1928
REID, William. Chf. Engr., São Paulo-Parana Ry., Ourinhos, São Paulo, Brazil.	M. Aug. 27, 1928
REYNOLDS, Thomas George. 132 Downer Pl., Aurora, Ill.	Jun. Oct. 1, 1928
RIBAL, Raymond Robert. 2630 College Ave., Berkeley, Calif.	Jun. Oct. 1, 1928
RICH, Henry Merritt. Asst. Engr., U. S. Engr. Office (Res., 1361 Forty-second St.), Sacramento, Calif.	Assoc. M. July 16, 1928
RINGWOOD, Thomas Edward. Chf. Engr., Montauk Beach Development Corporation, Care, Carl G. Fisher Properties, Montauk, N. Y.	Assoc. M. Oct. 1, 1928
ROBERTSON, Gordon James. 720 Hastings St., Pittsburgh, Pa.	Jun. Oct. 1, 1928
ROBINSON, John Walter. Engr., Spokane Water Div., (Res., East 517 Eighth Ave.), Spokane, Wash.	Assoc. M. Oct. 1, 1928
ROFMAN, Joseph. Junior Civ. Engr., Board of Transportation, New York (Res., 864 Forty-ninth St., Brooklyn), N. Y.	Jun. Oct. 1, 1928
ROGERS, Floyd Earl. Hoodsport, Wash.	Assoc. M. Aug. 27, 1928
ROSENBERG, David Howard. With Am. Cyanamid Co., New York (Res., 863 East 47th St., Brooklyn), N. Y.	Jun. Oct. 1, 1928
RUTLEDGE, Charlie Edwin. 9842 Sixtieth Ave., South, Seattle, Wash.	Jun. Oct. 1, 1928
SAGEHORN, Ernest Henry. Asst. Engr., Univ. of California, Berkeley, Calif.	Jun. Oct. 1, 1928
SAMAHA, Nicholas Rosseller. 265 Shawmut Ave., Boston, Mass.	Jun. April 18, 1927
SANTILLI, Frank. 981 Teller Ave., New York, N. Y.	Jun. Oct. 1, 1928
SANTOS, Tirso Nollora, Jr. 282 Massachusetts Ave., Cambridge, Mass.	Jun. Oct. 1, 1928
SAVIGNY, Harry Arthur. Gwinn, Mich.	Jun. Oct. 1, 1928
SAWYER, Ralph Albert. Chainman, M. of W. Dept., N. Y. C. R. R. (Res., 570 Western Ave.), Albany, N. Y.	Jun. Oct. 1, 1928
SAWYER, William Lincoln. With Mississippi Val. Structural Steel Co., R. R. 3, Decatur, Ill.	Jun. Oct. 1, 1928
SCHEID, Lee Edward. Civ. Engr., National Cash Register Co. (Res., 453 Irving Ave.), Dayton, Ohio.	Jun. Oct. 1, 1928
SCHNEIDER, Floyd Edward George Paul. 420 Marshall St., Gary, Ind.	Jun. Oct. 1, 1928
SCHOPPE, Ray Longfellow. Chf. of Party, U. S. Coast and Geodetic Survey, Washington, D. C.	Assoc. M. Oct. 2, 1922 M. Oct. 1, 1928
SCHROEDER, Charles William Emil. Eng. Asst., Board of Transportation, City of New York (Res., 128 East End Ave.), New York, N. Y.	Jun. Oct. 1, 1928
SCHULTZ, Walter Albert. Asst. County Engr., Eldora, Iowa.	Jun. Oct. 1, 1928
SCHWORM, Fred Gast. Div. Engr. of Bridges, Bureau of Eng., City Hall (Res., 828 East Stafford St., Germantown), Philadelphia, Pa.	Assoc. M. June 19, 1922 M. Oct. 1, 1928
SIMPSON, Augustus Hoffman. Junior Draftsman, The Port of New York Authority (Res., 330 West 15th St.), New York, N. Y.	Jun. Oct. 1, 1928
SIMPSON, Burr Henry. City Engr. (Res., 70 Kanawha St.), Buckhannon, W. Va.	Assoc. M. Dec. 6, 1915 M. Oct. 1, 1928
SINCLAIR, Russell Buck. With Springfield Water Dept., Provin Mt. Camp, Feeding Hills, Mass.	Jun. Oct. 1, 1928
SJOBERG, Harold Oliver. 5604 East 16th St., Oakland, Calif.	Jun. Oct. 1, 1928

MEMBERS—(*Continued*)		Date of Membership.
SMITH, Orville Adniroum. Eng. and Design of San. Sewers, City of Los Angeles, Los Angeles (Res., 1814 Lorain Rd., San Marino), Calif.	Assoc. M.	Oct. 1, 1928
SPATHELF, David Edward, Jr. 7170 Waterman Ave., University City, St. Louis, Mo.	Jun.	Oct. 1, 1928
SPERL, August George. Gen. Supt., Spencer, White & Prentis, Inc., 709 Sixth Ave., New York (Res., Winnebago Rd., Tuckahoe), N. Y.	Affiliate	Oct. 1, 1928
SPERLING, Robert Sigismond. Junior Engr., Board of Transportation, City of New York (Res., 165 West 91st St.), New York, N. Y.	Jun.	Oct. 1, 1928
STADTFELD, Nicolaas Theodorus Franciscus. Asst. Engr., Board of Transportation, 49 Lafayette St., New York (Res., 94–66 Two hundred and Twenty-fourth St., Queens Village), N. Y.	Assoc. M. M.	Feb. 25, 1924 Oct. 1, 1928
STEALY, Kirk H. Asst. Chf. Engr., Broadmoor Hotel Co. and Broadmoor Hotel Water & Power Co. (Res., 1512 West Pikes Peak Ave.), Colorado Springs, Colo.	Jun.	Oct. 1, 1928
STEELE, Robert McAra. Cons. Engr. and Electrician, 147 Woodstock Rd., Oxford, England	Assoc. M.	Oct. 1, 1928
STEINHAUSER, Harry Herman. Asst. to Hydr. Engr., Elec. Bond & Share Co., 2 Rector St., New York, N. Y.	Jun. Assoc. M. M.	Feb. 4, 1913 Mar. 13, 1917 Oct. 1, 1928
STEWART, William Paul. Y. M. C. A., 5722 Greene St., Germantown, Philadelphia, Pa.	Jun.	Oct. 1, 1928
STOLLE, Franz Karl Paul. Structural Designer, H. G. Balcom, New York (Res., 2428 Crescent St., Astoria), N. Y.	Jun.	Oct. 1, 1928
STRONG, Milton Joseph. Constr. Supt., Broadmoor Hotel Co. and Broadmoor Hotel, Water & Power Co., Broadmoor Hotel, Colorado Springs, Colo.	Affiliate	Oct. 1, 1928
STROTHMAN, Edward Charles. Steel Estimator and Designer, McClintic-Marshall Co., Oliver Bldg. (Res., Y. M. C. A., Wood St. and 3d Ave.), Pittsburgh, Pa.	Jun.	Oct. 1, 1928
STUART, Alfred Allen, Jr. 20-23 Thirty-first St., Astoria, N. Y.	Jun.	Oct. 1, 1928
STUART, Cruikshank. Care, Whiting Turner Const. Co., Loudon, Tenn.	Jun.	Oct. 1, 1928
SUHR, Carl John. Asst. Engr. for W. W. Young (Res., 409 Prospect Ave.), Mount Vernon, N. Y.	Jun.	Oct. 1, 1928
SWEET, Charles Latham. 224 Rosewood Pl., Riverside, Calif.	Jun.	Oct. 1, 1928
THATCHER, John Robert. Box 581, Vicksburg, Miss.	Jun.	Oct. 1, 1928
THOMAS, Bertram Pearson. Asst. Supt., Water Div., Dept. of Public Utilities (Res., 2914 North 24th St.), Tacoma, Wash.	M.	April 23, 1928
THOMAS, John Grimes Walker. 88 Bay State Rd., Boston, Mass.	Jun.	Oct. 1, 1928
TITUS, William Jacy. Chf. Engr., State Highway Comm., Capitol Bldg., Indianapolis, Ind.	Assoc. M. M.	Dec. 2, 1914 Oct. 1, 1928
TRAVERS, William Jasper, Jr. Engr.'s Asst., Scofield-Twaits Co., Los Angeles, Calif.	Jun.	Oct. 1, 1928
TURNER, William Fitzhugh. Div. Engr., S. P. R. R. (Res., 2336 Portola Way), Sacramento, Calif.	M.	Oct. 1, 1928
TYRRELL, Frank Charles. 4262 Manayunk Ave., Roxborough, Philadelphia, Pa.	Jun.	Oct. 1, 1928
VANDERHOUT, William. 335 Union Ave., Elizabeth, N. J.	Jun.	Oct. 1, 1928
VAN SILLER, Alfred. Chf. Locating Engr., Sociedad Constructora de la Carretera del Pacifico, Carrera 5 A, No. 713, Cali, Colombia	M.	Aug. 27, 1928
VEEDER, Herman Greig, Jr. Engr. of Erection, McClintic-Marshall Co., Box 413, Bristol, R. I.	Jun.	Oct. 1, 1928
VON FABRICE, Roman. Designing Engr., Public Service Production Co., 80 Park Pl., Newark, N. J.	Assoc. M. M.	Mar. 12, 1923 Oct. 1, 1928
WAGNER, Elmer Chester Louis. Executive Secy., Missouri Branch, Associated Gen. Contrs. of America, 604 Central Trust Bldg., Jefferson City, Mo.	Assoc. M. M.	Oct. 11, 1920 Oct. 1, 1928
WAIDELICH, Alfred Thomas. 5216 North 10th St., Philadelphia, Pa.	Jun.	Oct. 1, 1928
WALLENIUS, John William. Cobble Mountain Camp, Westfield, Mass.	Jun.	Oct. 1, 1928
WARNOCK, Jacob Eugene. Asst. Civ. Engr., U. S. Engr. Office, Box 900, Nashville, Tenn.	Jun.	Oct. 1, 1928
WEBB, Stafford Riddle. Chf. Engr., Carolina Steel & Iron Co. (Res., 308 North Spring St.), Greensboro, N. C.	Assoc. M. M.	Aug. 30, 1926 Oct. 1, 1928
WEINBERG, Hyman. 521 West 111th St., Apartment 22, New York, N. Y.	Jun.	Oct. 1, 1928
WILLIAMS, Benjamin Franklin. State Reclamation Engr., Box 276, Capitol Station, Austin, Tex.	Assoc. M. M.	July 12, 1926 Oct. 1, 1928
WILLIAMS, Charles Wyatt. Secy., Suburban Eng. Co. (Res., Old Stone House, Spuyten Duyvil), New York, N. Y.	Assoc. M.	Oct. 1, 1928
WILLIS, Edward Allen. Junior Civ. Engr., U. S. Bureau of Public Roads, Washington, D. C.	Jun.	Oct. 1, 1928
WILLIS, Robert Adams. Office Engr., Portland Cement Assoc., 1313 Syndicate Trust Bldg., St. Louis, Mo.	Assoc. M.	Oct. 1, 1928
WILSON, Samuel Allan. With McClintic-Marshall Co., Box 54, Leetsdale, Pa.	Jun.	Oct. 1, 1928

MEMBERS—(*Continued*)		Date of Membership.
WISE, Whitby Foster, Jr. Pres., Southwest Stone Co., 404 Santa Fé Bldg., Dallas, Tex.	Assoc. M.	Oct. 1, 1928
WITZEL, Stanley Arthur. Care, T. B. Wood, Bryan, Tex.	Jun.	July 16, 1928
WOJDYGO, Joseph Mortimer. 6047 South Spaulding Ave., Chicago, Ill.	Jun.	Oct. 1, 1928
WOOD, Jerome W. 801 Main St., Niles, Mich.	Jun.	Oct. 1, 1928
WOODWARD, Richard Morton. Asst. to Chf. Engr., Stanley Co. of America, 11th and Market Sts., Philadelphia, Pa.	Assoc. M.	Oct. 1, 1928
WOODWORTH, Kingsley Bliss. 111 South Oxford St., Brooklyn, N. Y.	Jun.	Oct. 1, 1928
WORLEY, Stewart Earl. 309 Ogden St., Bastrop, La.	Jun.	Oct. 1, 1928
WORRALL, Arthur Roland. 2741 Proctor St., Port Arthur, Tex.	Jun.	Oct. 1, 1928
WRIGHT, James Clayton. Reservoir Engr., Arlington. Calif.	Assoc. M.	May 19, 1924
	M.	Oct. 1, 1928
WYLIE, Paul Eugene. Gen. Bldg. Contr., 619 California Bank Bldg., Los Angeles, Calif.	Assoc. M.	Jan. 16, 1922
	M.	Oct. 1, 1928

Reinstatements

MEMBERS	Date of Reinstatement
GERRY, Martin Hughes, Jr.	Oct. 1, 1928
RANDOLPH, Beverly Strother	Oct. 1, 1928
ASSOCIATE MEMBERS	
PATTERSON, Arthur Cecil	Oct. 1, 1928
REYNOLDS, Edwin George, Jr.	Oct. 1, 1928

Resignations

ASSOCIATE MEMBER	Date of Resignation
CLARK, J. Stanley	Oct. 1, 1928

Deaths

BALL, Charles Backus. Elected Member, October 1, 1890; died October 18, 1928.
EDWARDS, John Grenfell. Elected Associate Member, January 16, 1928; died October 24, 1928.
EIDLITZ, Otto Marc. Elected Member, September 2, 1902; died October 30, 1928.
HUGHES, George Alfred. Elected Associate Member, May 13, 1918; Member, October 11, 1920; died October 4, 1928.
HUMPHREY, Richard Lewis. Elected Associate Member, May 5, 1897; Member, May 3, 1904; died November 2, 1928.
McGUFFIE, Frank Hill. Elected Associate Member, December 5, 1927; died October 17, 1928.
MORTON, George William. Elected Associate Member, June 19, 1922; died October 7, 1928.
NEWCOMB, William Taft. Elected Associate Member, February 6, 1912; Member, March 9, 1920; died February 4, 1926.
PERKINS, Seth. Elected Member, September 11, 1917; date of death unknown.
PRICE, William Gunn. Elected Member, April 3, 1895; died July 6, 1928.
SCHROEDER, Erich George. Elected Associate Member, August 28, 1922; died September 24, 1928.
SHEPPARD, Charles Alfred. Elected Member, November 30, 1909; died October 18, 1928.
TROTTER, Alfred Williams. Elected Junior, September 5, 1883; Member, November 7, 1894; died October 4, 1928.

Total Membership of the Society, November 6, 1928

Members	5 556	
Associate Members	5 832	
Corporate Members		11 388
Honorary Members		16
Juniors		1 889
Affiliates		139
Fellows		7
Total		13 439

APPLICATIONS FOR ADMISSION AND FOR TRANSFER

The Constitution provides that the Board of Direction shall elect or reject all applicants for *Admission* or for *Transfer,* and, in order to determine justly the eligibility of each candidate, the Board must depend largely upon the Membership for information.

This list is issued to members in every grade for the purpose of securing all such available information, and every member is urged to scan carefully each monthly list of candidates and to furnish the Board with data in regard to any applicant which may aid in determining his eligibility. It is the *Duty* of all *Members* to the *Profession* to assist the Board in this manner.

It is especially urged, in communications concerning applicants, that errors in the record be pointed out and a *Definite Recommendation as to the Proper Grading in Each Case* be given, inasmuch as the grading must be based upon the opinions of those who know the applicant personally, as well as upon the nature and extent of his professional experience. If facts exist derogatory to the personal character or to the professional reputation of an applicant, they should be promptly communicated to the Board. *Communications Relating to Applicants are considered by the Board as Strictly Confidential.*

The Board of Direction will not consider the applications herein contained from residents of North America until the expiration of thirty (30) days, and from non-residents of North America until the expiration of ninety (90) days from January 1, 1928.

MINIMUM REQUIREMENTS FOR ADMISSION

Grade	General Requirement	Age	Length of Active Practice	Responsible charge of work
Member	Qualified to design as well as to direct work	32 years	12 years*	5 years
Associate Member	Qualified to direct work	25 years	8 years*	1 year
Junior	Qualified for sub-professional work	18 years†	4 years*	
Affiliate	Qualified by scientific acquirements or practical experience to co-operate with engineers			
Fellow	Contributor to the permanent funds of the Society			

* Graduation from a school of engineering of recognized reputation is equivalent to 4 years' active practice.

† Membership ceases at age of 32 unless transferred to higher grade.

LIST OF APPLICANTS.

Names and Addresses of Applicants for Admission and for Transfer on this Preliminary List, Arranged Alphabetically.

The fact that applicants give the names of certain members as references does not necessarily mean that such members endorse.

The number in the center above each record indicates the serial number of the applicant for the current year, and that at the left the district in which he resides.

The abbreviations in Italics represent, respectively, *TT*, Total Time; *SP*, Sub-Professional Work; *P*, Professional Work; *RC*, Responsible Charge; *D*, Design. The figures showing the amount of time spent in Responsible Charge and on Design are the estimate of the Applicant. The allowance of four years for graduation and of one-half of a year for each academic year successfully completed in an engineering college without graduation is included in Total Time and Sub-Professional Work.

FOR ADMISSION

1

(8) **ABBERLEY, ELBERT KELSEY,** 264 Wisconsin Ave., Oak Park, Ill. (Age 32. Born Brooklyn, N. Y.) 1915 B. S. in C. E., and 1918 C. E., Cooper Union. *TT 4: SP 4.* Aug. 1915 to date Engr. with Turner Constr. Co., New York City, being Draftsman (1 year) and Checker or Squad Boss (1 year) on structural drawings, detailing reinforcing, and drawing and detailing equipment for reinforced concrete industrial buildings; 9⅙ years Asst. Engr.: in charge (under supervision) of design, drawings and specifications for reinforced concrete industrial buildings and finished buildings with structural steel frames (over 60 buildings, value over $25 000 000, some named in application); acted as Engr. in field (1 7/12 years), in charge of engineering work on new home office buildings (over $4 000 000) of Massachusetts Mutual Life Insurance Co., Springfield, Mass., checking structural designs and coordinating drawings and specifications; 1 year Engr. in charge of engineering work in Chicago territory, including design, drawings, specifications, etc., for work on industrial and finished structures; at present in charge of engineering work on alteration and reconstruction of Cable Plant of Western Elec. Co., Hawthorne Works (to cost about $3 000 000); work under general control of W. E. Co.'s Plant Eng. Dept. *TT 12.2: SP 2: P 10.2: RC 10.2: D 10.2. TT 16.2: SP 6: P 10.2: RC 10.2: D 10.2.* Refers to C. D. Conklin, Jr., D. H. Dixon, F. E. Foss, E. J. Moore, J. P. H. Perry, C. T. Schwarze, O. C. Spurling, A. W. Stephens, A. C. Tozzer, H. C. Turner, S. Wilmot.

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(1) **AIVAZIAN, HARRY,** Care, Dr. J. L. Stewart, 160 West 44th St., New York City (Age 26. Born Armavir, Caucasus, Russia.) A. B., Coll. of Lauzanne, Switzerland. B. S., Geneva Coll., Switzerland. 1927 S. B., Mass. Inst. Tech. *TT 4: SP 4.* Refers to J. B. Babcock, 3d, C. M. Spofford.

3

(7) **ALLEN, HAROLD JOSEPH,** 402 Navahoe Ave., Detroit, Mich. (Age 33. Born Niagara Falls, N. Y.) 1923 B. S. C. E., Univ. of Mich. *TT 4: SP 4.* June–Aug. 1923 structural drafting, Union Carbide Co., Niagara Falls, N. Y. *TT 0.2: SP 0.2.* Aug. 1923 to June 1924 street detailing and design, in charge of building erection, Canadian Bridge Co., Walkerville, Ont. *TT 0.8: P 0.8: RC 0.6.* June 1924–July 1925 steel drafting, Russel Wheel & Foundry Co., Detroit, Mich. *TT 1.1: P 1.1.* July to Nov. 1925 Asst. Supt. and Archt. with Albert Kahn, Detroit. *TT 0.3: P 0.3: RC 0.3.* Nov. 1925 to June 1926 with Michigan Central R. R., Bridge Dept., Detroit. *TT 0.6: P 0.6: RC 0.3.* June 1926 to June 1927 Bridge Inspector and Draftsman with Wm. N. Miller Co., Detroit. *TT 1: P 1: RC 0.5.* June 1927 to date Supt. of Constr., with Edward Gray, Inc., Detroit. *TT 0.6: P 0.6: RC 0.2: D 0.2. TT 8.5: SP 4.2: P 4.3: RC 1.9: D 0.2.* Refers to J. E. Bebb, J. H. Cissel, L. M. Gram, W. C. Head, E. M. Walker.

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(10) **ARMSTRONG, WALTON CONOVER,** Care, Missouri Valley Bridge & Iron Co., Hurricane, Ala. (Age 27. Born Liberal, Kans.) 1927 B. S. in Civ. Eng., Univ. of Ariz. *TT 4: SP 4.* June to Dec. 1923 Draftsman, and June 1925 to Sept. 1926 Asst. Engr. in charge of